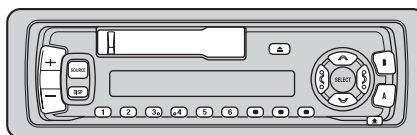


Service Manual

Pioneer

KEH-3930R/X1M/EW



ORDER NO.
CRT2420

HIGH POWER CASSETTE PLAYER WITH RDS TUNER

KEH-3930R

X1M/EW

KEH-3900R

X1M/EW

● This service manual should be used together with the following manual(s):

| Model No. | Order No. | Mech. Module | Remarks |
|-----------|-----------|--------------|--|
| CX-1011 | CRT2406 | 3L | Cassette Mech. Module:Circuit Description, Mech.Description, Disassembly |

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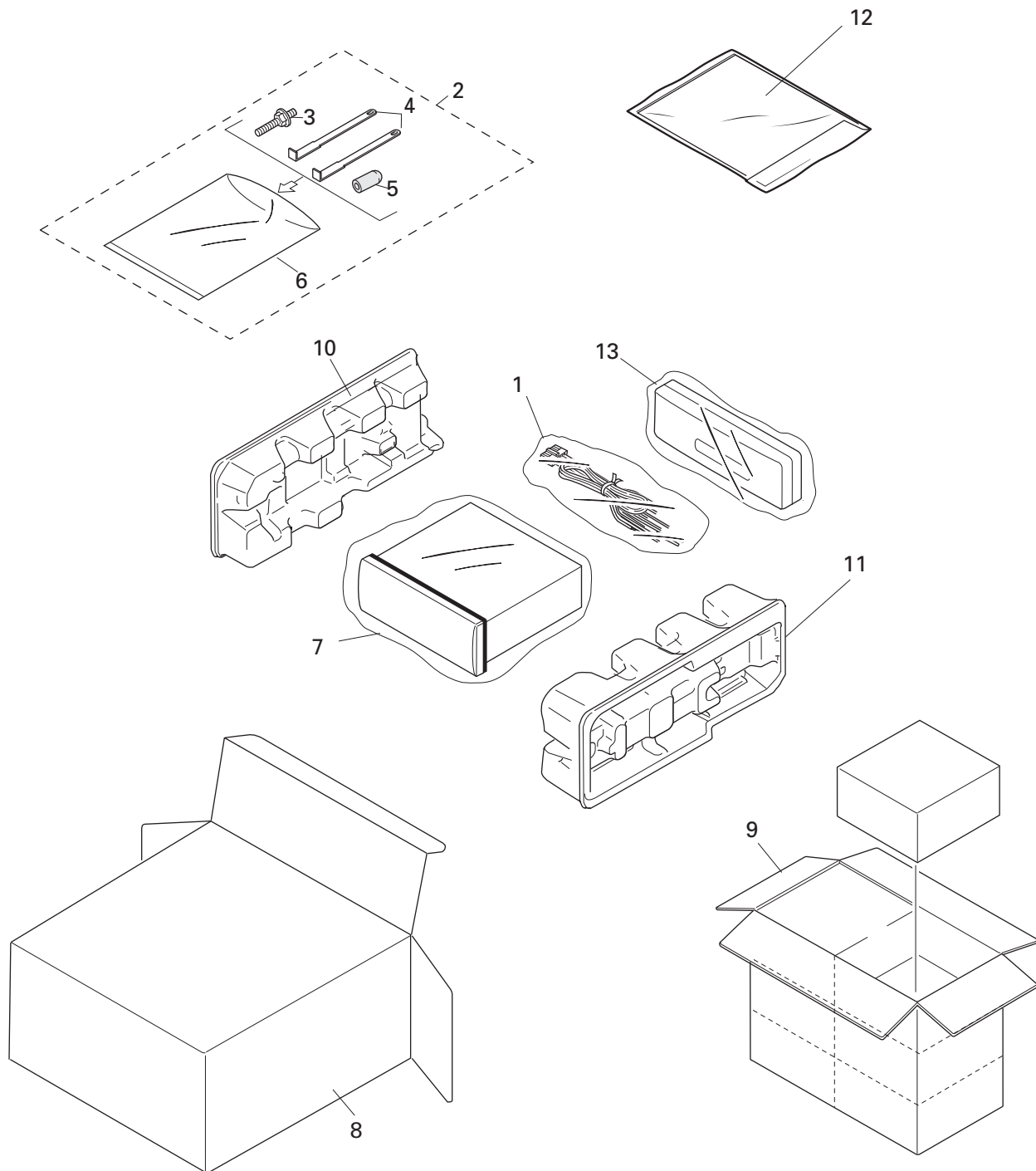
PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

(1) PACKING SECTION PARTS LIST

| Mark No. | Description | Part No. | Mark No. | Description | Part No. |
|----------|--------------------|-----------------------|----------|---------------------|----------|
| | 1 Cord Assy | CDE6100 | 11 | Protector | CHP2244 |
| | 2 Accessory Assy | CEA1917 | 12-1 | Owner's Manual | CRD3122 |
| | 3 Screw | CBA1304 | 12-2 | Owner's Manual | CRD3123 |
| | 4 Handle | CNC5395 | 12-3 | Installation Manual | CRD3124 |
| | 5 Bush | CNV3930 | * | 12-4 Passport | CRY1013 |
| * | 6 Polyethylene Bag | E36-615 | * | 12-5 Warranty Card | CRY1157 |
| | 7 Polyethylene Bag | CEG-162 | 12-6 | Polyethylene Bag | CEG1116 |
| | 8 Carton | See Contrast table(2) | 13 | Case Assy | CXB3520 |
| | 9 Contain Box | See Contrast table(2) | | | |
| | 10 Protector | CHP2243 | | | |

(2) CONTRAST TABLE

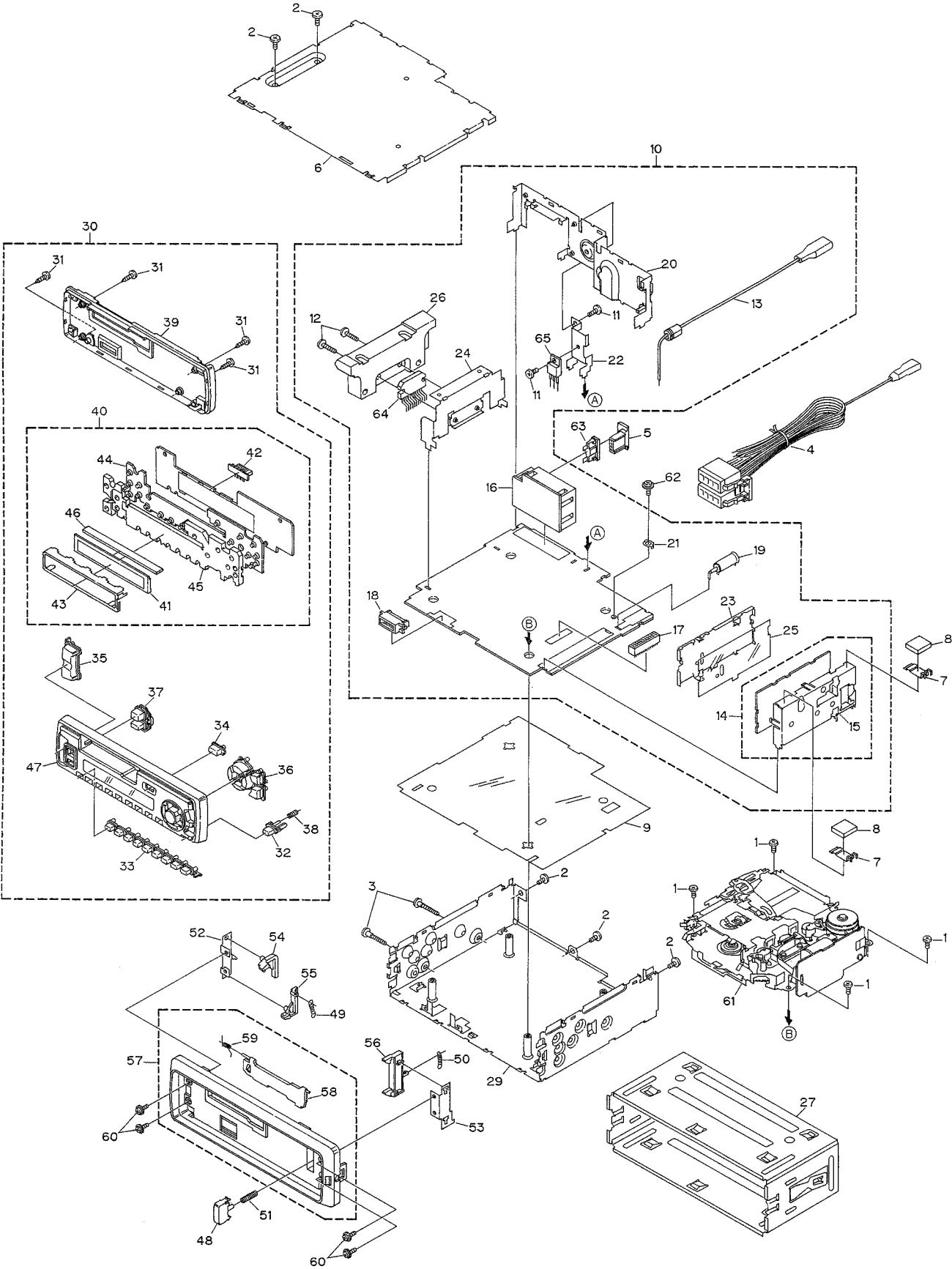
KEH-3930R/X1M/EW and KEH-3900R/X1M/EW are constructed the same except for the following:

| Mark No. | Symbol and Description | Part No. | |
|----------|------------------------|------------------|------------------|
| | | KEH-3930R/X1M/EW | KEH-3900R/X1M/EW |
| 8 | Carton | CHG3844 | CHG3843 |
| 9 | Contain Box | CHL3844 | CHL3843 |

● Owner's Manual, Installation Manual

| Model | Part No. | Language |
|------------------|----------|---|
| KEH-3930R/X1M/EW | CRD3122 | English, Spanish, German |
| KEH-3900R/X1M/EW | CRD3123 | French, Italian, Dutch |
| | CRD3124 | English, Spanish, German, French, Italian, Dutch |

2.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

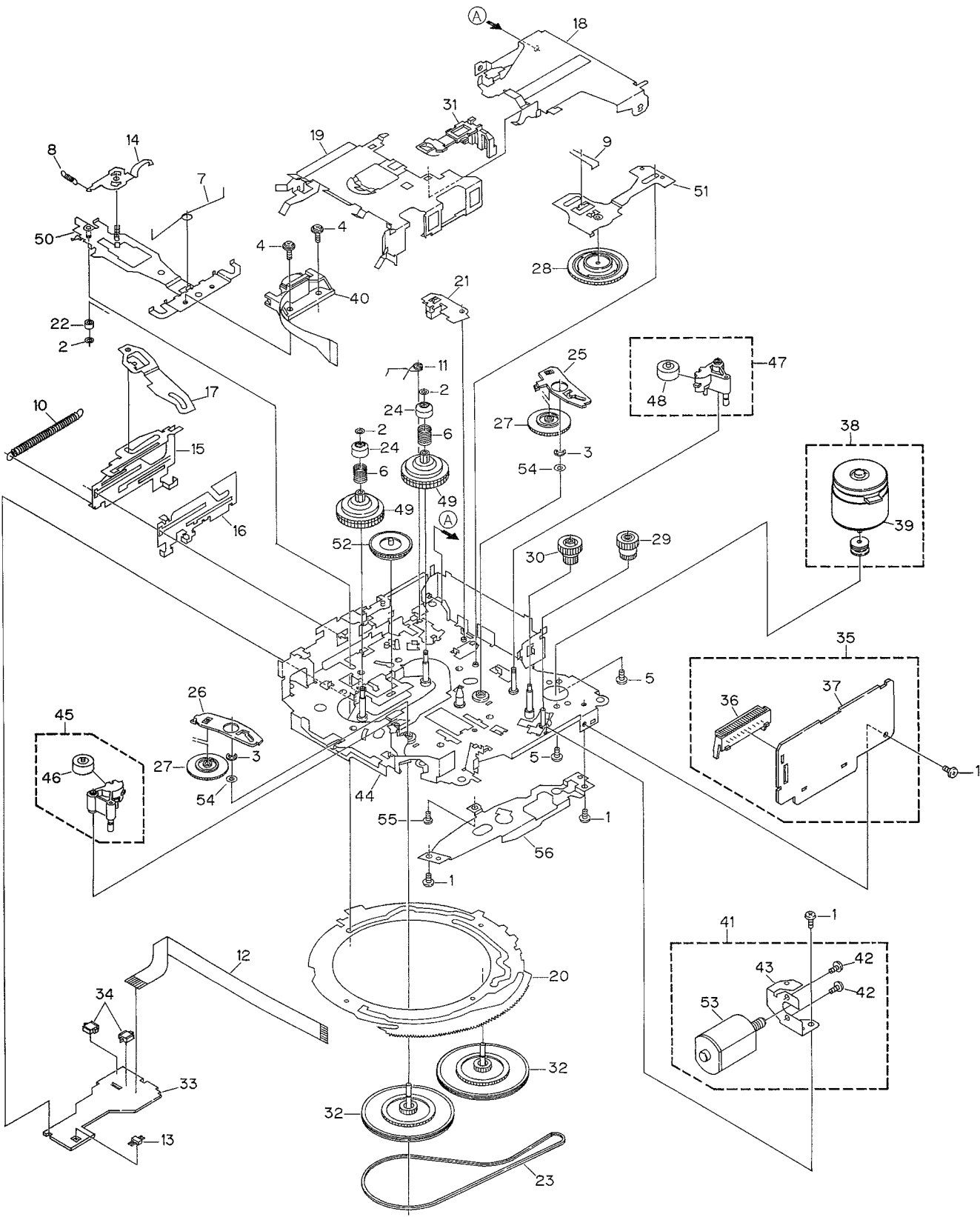
| Mark No. | Description | Part No. | Mark No. | Description | Part No. |
|----------|---------------------|-----------------------|----------|---------------------------|-----------------------|
| 1 | Screw | BSZ26P050FMC | 31 | Screw | BPZ20P100FZK |
| 2 | Screw | BSZ30P050FMC | 32 | Button(DETACH) | See Contrast table(2) |
| 3 | Screw | BSZ30P200FMC | 33 | Button(1-6) | CAC6275 |
| 4 | Cord Assy | CDE6100 | 34 | Button(EJECT) | CAC6277 |
| 5 | Plug | CKM1314 | 35 | Button(+ -) | See Contrast table(2) |
| 6 | Case | CNB2350 | 36 | Button(SELECT) | See Contrast table(2) |
| 7 | Earth Plate | CNC8368 | 37 | Button(SOURCE/LOUD) | CAC6494 |
| 8 | Spacer | CNM4913 | 38 | Spring | CBH2210 |
| 9 | Insulator | CNM5963 | 39 | Cover | See Contrast table(2) |
| 10 | Tuner Amp Unit | CWM6806 | 40 | Keyboard Unit | See Contrast table(2) |
| 11 | Screw | BSZ26P080FMC | 41 | LCD(LCD1801) | CAW1559 |
| 12 | Screw | BSZ26P160FMC | 42 | Connector(CN1801) | CKS3580 |
| 13 | Cord | CDE6158 | 43 | Holder | CNC8517 |
| 14 | FM/AM Tuner Unit | CWE1500 | 44 | Rubber | CNV5954 |
| 15 | Holder | CNC7532 | 45 | Lighting Conductor | CNV6274 |
| 16 | Plug(CN604) | CKM1288 | 46 | Rubber | CNV5968 |
| 17 | Connector(CN602) | CKS3568 | 47 | Grille Unit | See Contrast table(2) |
| 18 | Connector(CN601) | CKS3581 | 48 | Button | CAC4836 |
| 19 | Antenna Jack(CN402) | CKX1056 | 49 | Spring | CBH1834 |
| 20 | Panel | CNB2344 | 50 | Spring | CBH1835 |
| 21 | Holder | CNC5399 | 51 | Spring | CBH2182 |
| 22 | Holder | CNC6845 | 52 | Bracket | CNC6135 |
| 23 | Holder | CNC7533 | 53 | Bracket | CNC6791 |
| 24 | Holder | CNC7996 | 54 | Arm | CNV4692 |
| 25 | Insulator | CNM5967 | 55 | Arm | CNV4693 |
| 26 | Heat Sink | CNR1505 | 56 | Arm | CNV4728 |
| 27 | Holder Unit | CXB2687 | 57 | Panel Unit | See Contrast table(2) |
| 28 | | | 58 | Door | See Contrast table(2) |
| 29 | Chassis Unit | See Contrast table(2) | 59 | Spring | CBH1838 |
| 30 | Detach Grille Assy | See Contrast table(2) | 60 | Screw | IMS20P030FZK |
| | | | 61 | Cassette Mechanism Module | EXK4100 |
| | | | 62 | Screw | ISS26P055FUC |
| | | | 63 | Fuse(10A) | CEK1136 |
| | | | 64 | IC(IC302) | TDA7384 |
| | | | 65 | Transistor(Q904) | 2SD2396 |

(2) CONTRAST TABLE

KEH-3930R/X1M/EW and KEH-3900R/X1M/EW are constructed the same except for the following:

| Mark No. | Symbol and Description | Part No. | |
|----------|------------------------|------------------|------------------|
| | | KEH-3930R/X1M/EW | KEH-3900R/X1M/EW |
| 29 | Chassis Unit | CXB4530 | CXB4529 |
| 30 | Detach Grille Assy | CXB4850 | CXB4849 |
| 32 | Button(DETACH) | CAC5929 | CAC5789 |
| 35 | Button(+ -) | CAC6458 | CAC6273 |
| 36 | Button(SELECT) | CAC6459 | CAC6276 |
| 39 | Cover | CNS5662 | CNS5661 |
| 40 | Keyboard Unit | CWM6813 | CWM6812 |
| 47 | Grille Unit | CXB5840 | CXB4519 |
| 57 | Panel Unit | CXB4929 | CXB4928 |
| 58 | Door | CAT2108 | CAT2109 |

2.3 CASSETTE MECHANISM MODULE

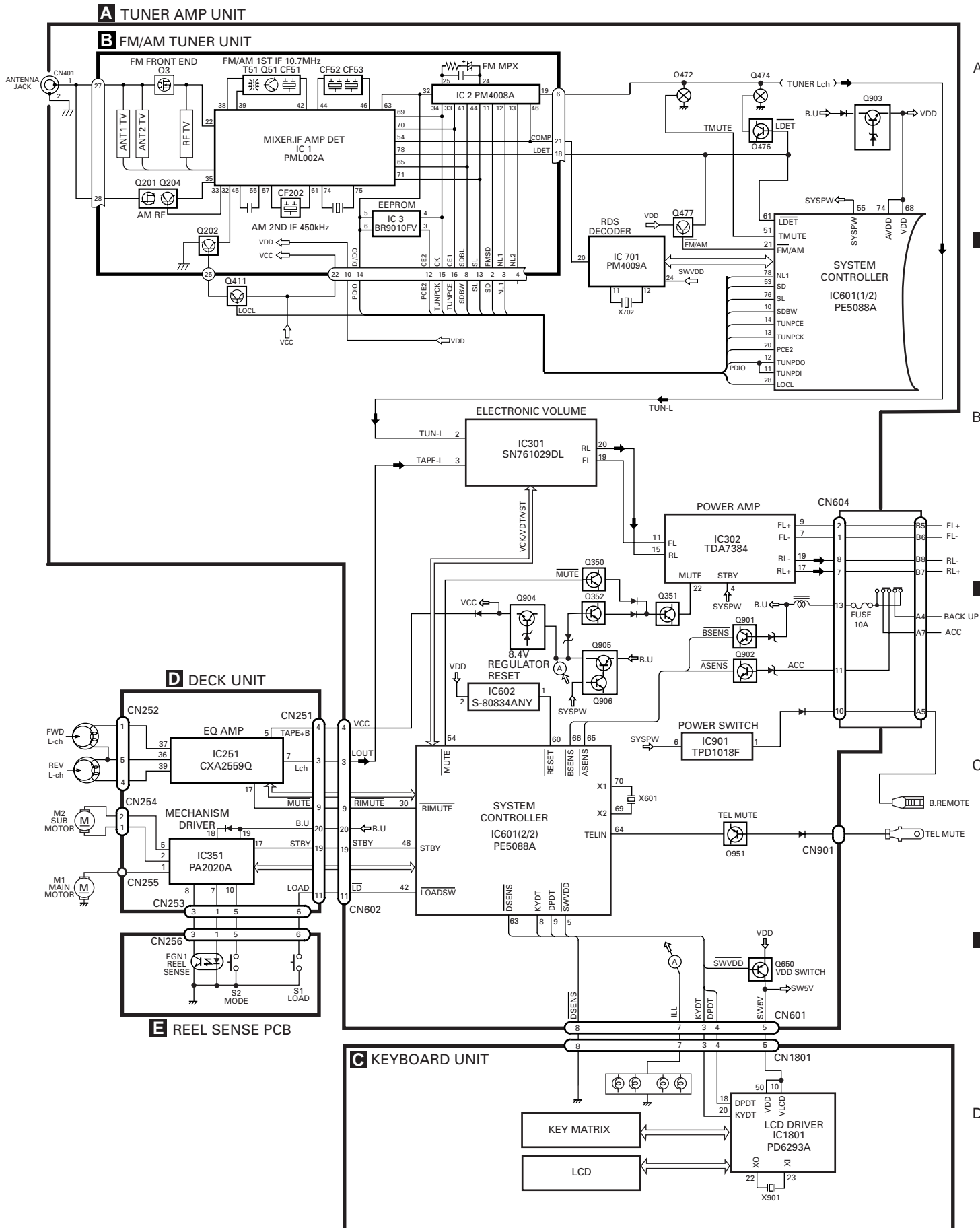


● CASSETTE MECHANISM MODULE SECTION PARTS LIST

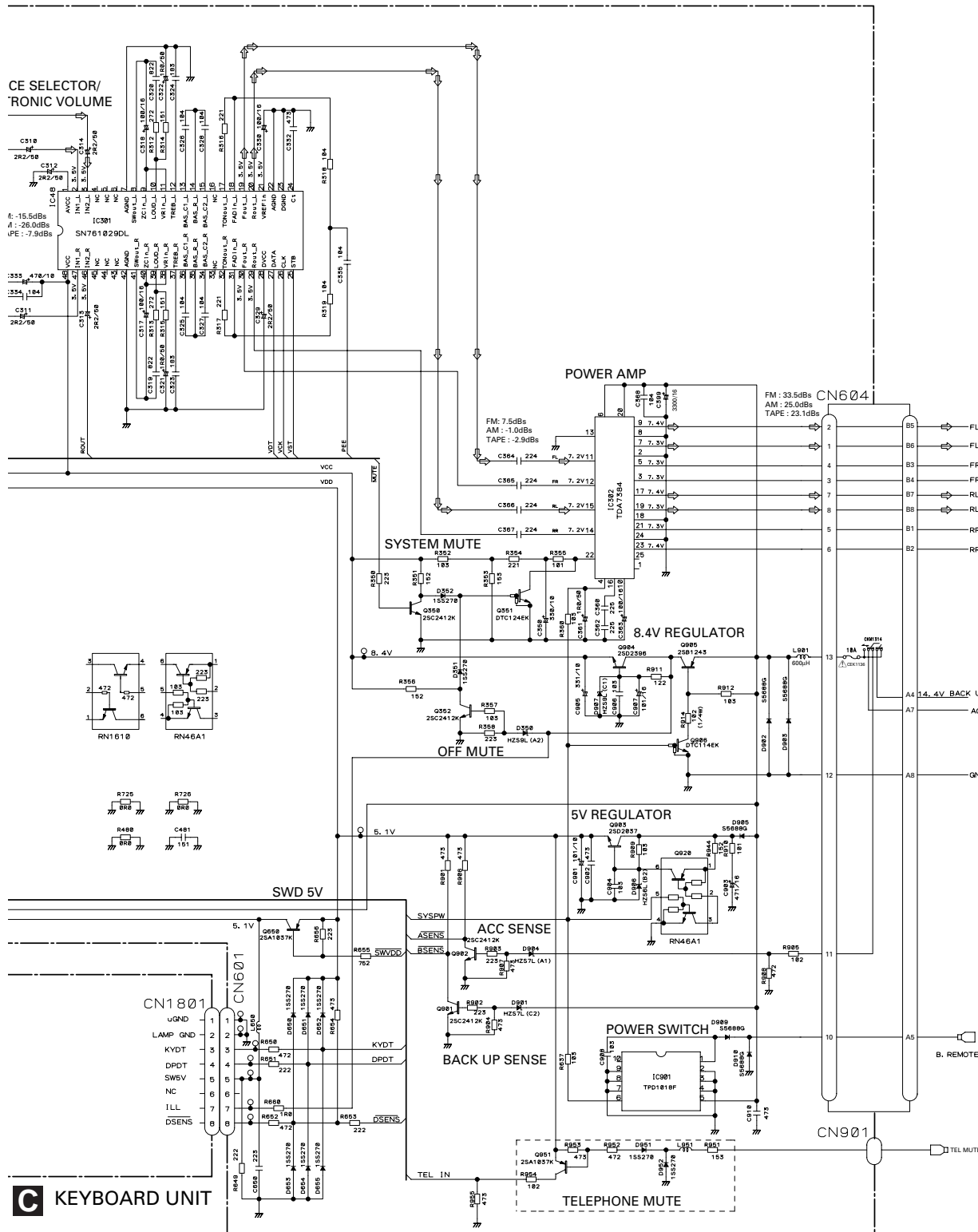
| Mark No. | Description | Part No. | Mark No. | Description | Part No. |
|----------|-----------------------|--------------|----------|---------------------|----------|
| 1 | Screw | BSZ20P040FMC | 46 | Pinch Roller | ENV1518 |
| 2 | Washer | CBF1037 | 47 | Pinch Holder Unit | EXA1583 |
| 3 | Washer | CBG1003 | 48 | Pinch Roller | ENV1518 |
| 4 | Screw | EBA1028 | 49 | Reel Unit | EXA1585 |
| 5 | Screw | CBA1037 | 50 | Head Base Unit | EXA1586 |
| 6 | Spring | EBH1531 | 51 | Lever Unit | EXA1587 |
| 7 | Spring | EBH1624 | 52 | Gear Unit | EXA1588 |
| 8 | Spring | EBH1625 | 53 | Motor Unit(Service) | EXX1055 |
| 9 | Spring | EBH1626 | 54 | Washer | HBF-179 |
| 10 | Spring | EBH1627 | 55 | Screw | CBA1250 |
| 11 | Spring | EBH1628 | 56 | Bracket | ENC1542 |
| 12 | Cord | EDD1024 | | | |
| 13 | Photo-reflector(EGN1) | EGN1004 | | | |
| 14 | Arm | ENC1526 | | | |
| 15 | Lever | ENC1530 | | | |
| 16 | Lever | ENC1531 | | | |
| 17 | Arm | ENC1532 | | | |
| 18 | Frame | ENC1533 | | | |
| 19 | Holder | ENC1534 | | | |
| 20 | Gear | ENC1535 | | | |
| 21 | Arm | ENC1536 | | | |
| 22 | Roller | ENR1040 | | | |
| 23 | Belt | ENT1027 | | | |
| 24 | Collar | ENV1508 | | | |
| 25 | Arm | ENV1539 | | | |
| 26 | Arm | ENV1540 | | | |
| 27 | Gear | ENV1544 | | | |
| 28 | Gear | ENV1547 | | | |
| 29 | Gear | ENV1548 | | | |
| 30 | Worm Wheel | ENV1550 | | | |
| 31 | Lever | ENV1551 | | | |
| 32 | Flywheel | ENV1554 | | | |
| 33 | Gathering PCB | ENX1054 | | | |
| 34 | Switch(S1,S2) | ESG1007 | | | |
| 35 | Deck Unit | EWM1023 | | | |
| 36 | Plug(CN251) | CKS3540 | | | |
| 37 | Gathering PCB | ENX1053 | | | |
| 38 | Motor Unit(M1) | EXA1491 | | | |
| 39 | Motor | EXM1028 | | | |
| 40 | Head Assy(HD1) | EXA1592 | | | |
| 41 | Motor Unit(M2) | EXA1580 | | | |
| 42 | Screw | BMZ20P022FMC | | | |
| 43 | Bracket | ENC1528 | | | |
| 44 | Chassis Unit | EXA1582 | | | |
| 45 | Pinch Holder Unit | EXA1584 | | | |

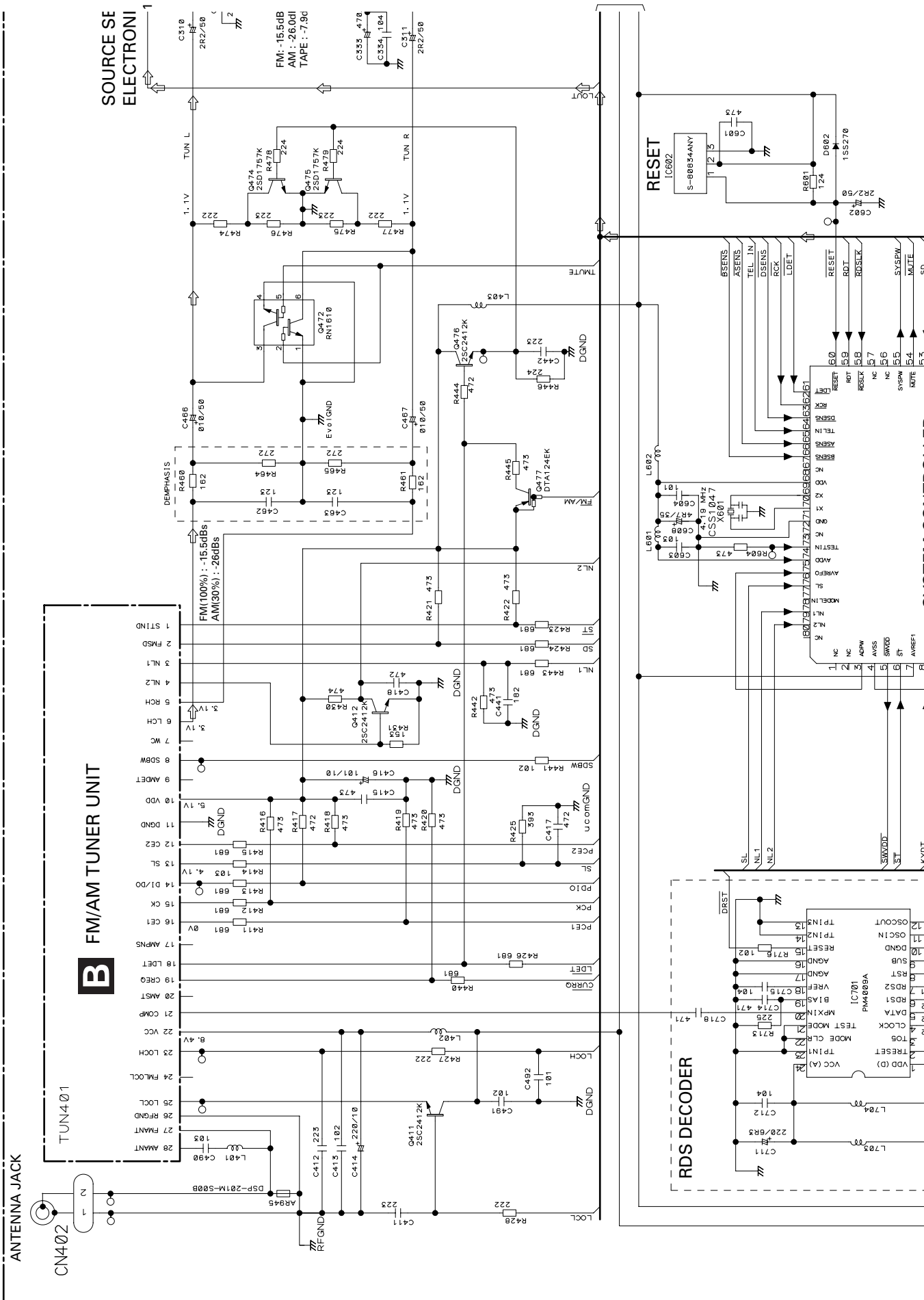
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

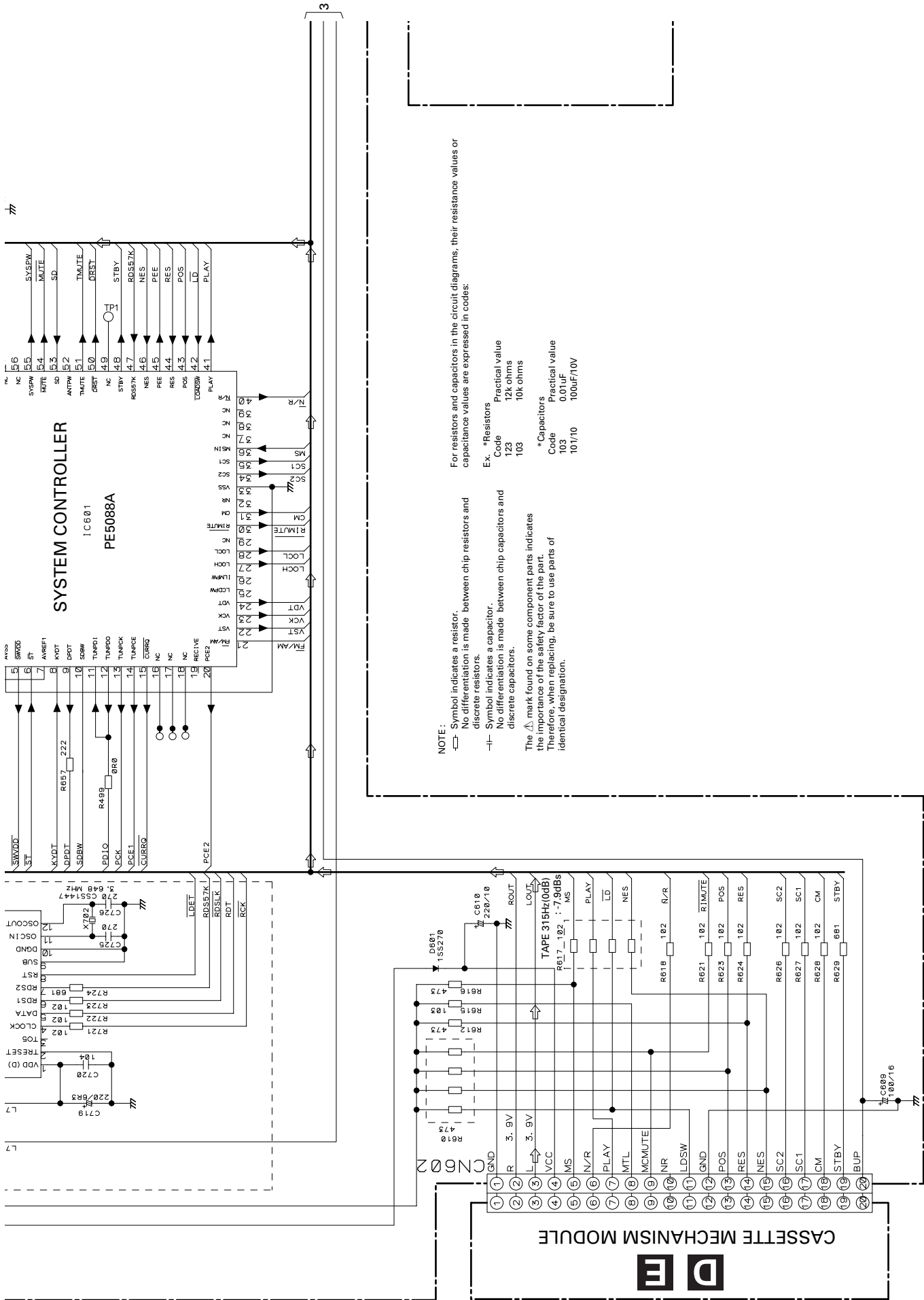
3.1 BLOCK DIAGRAM

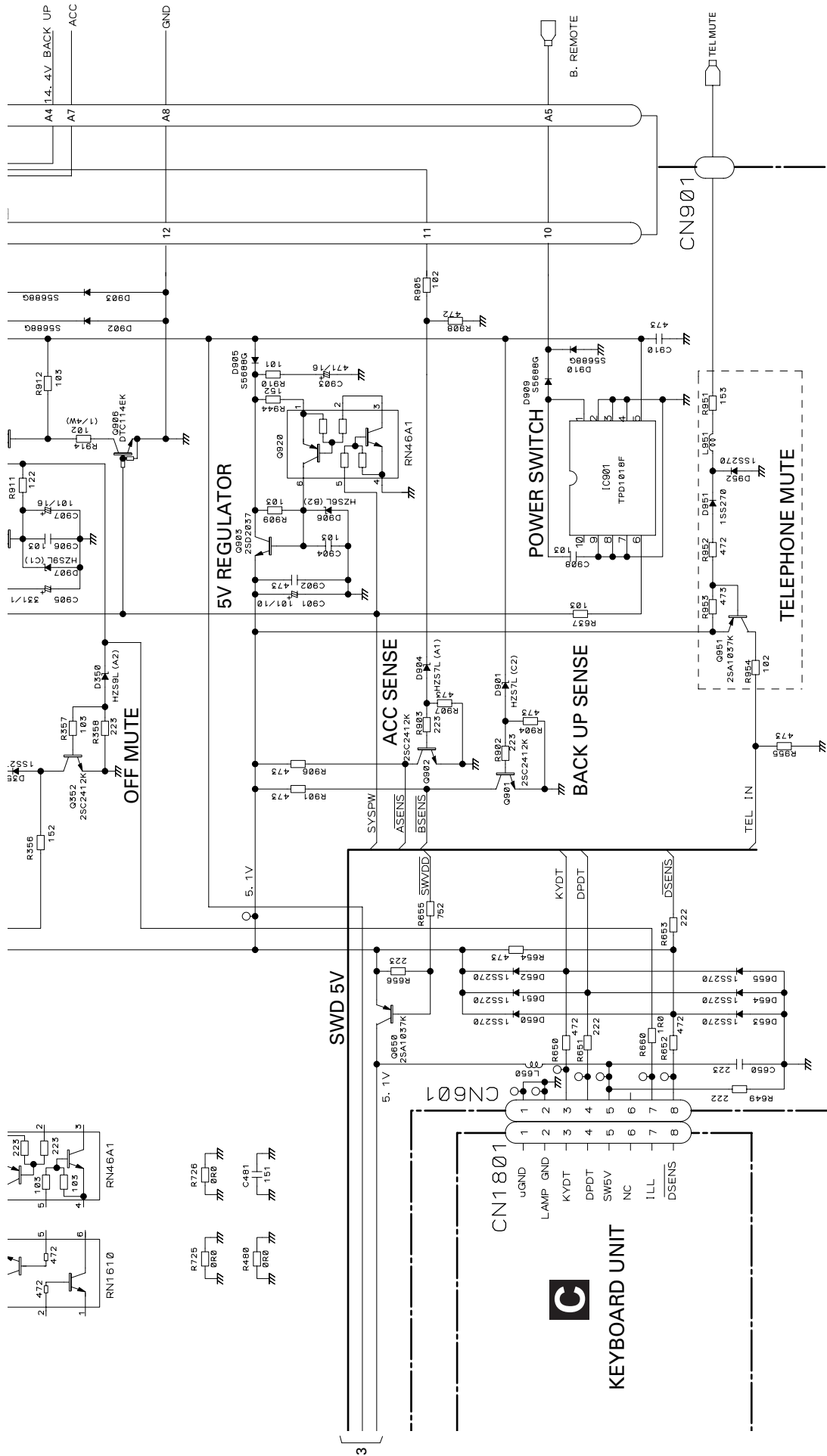


A-b

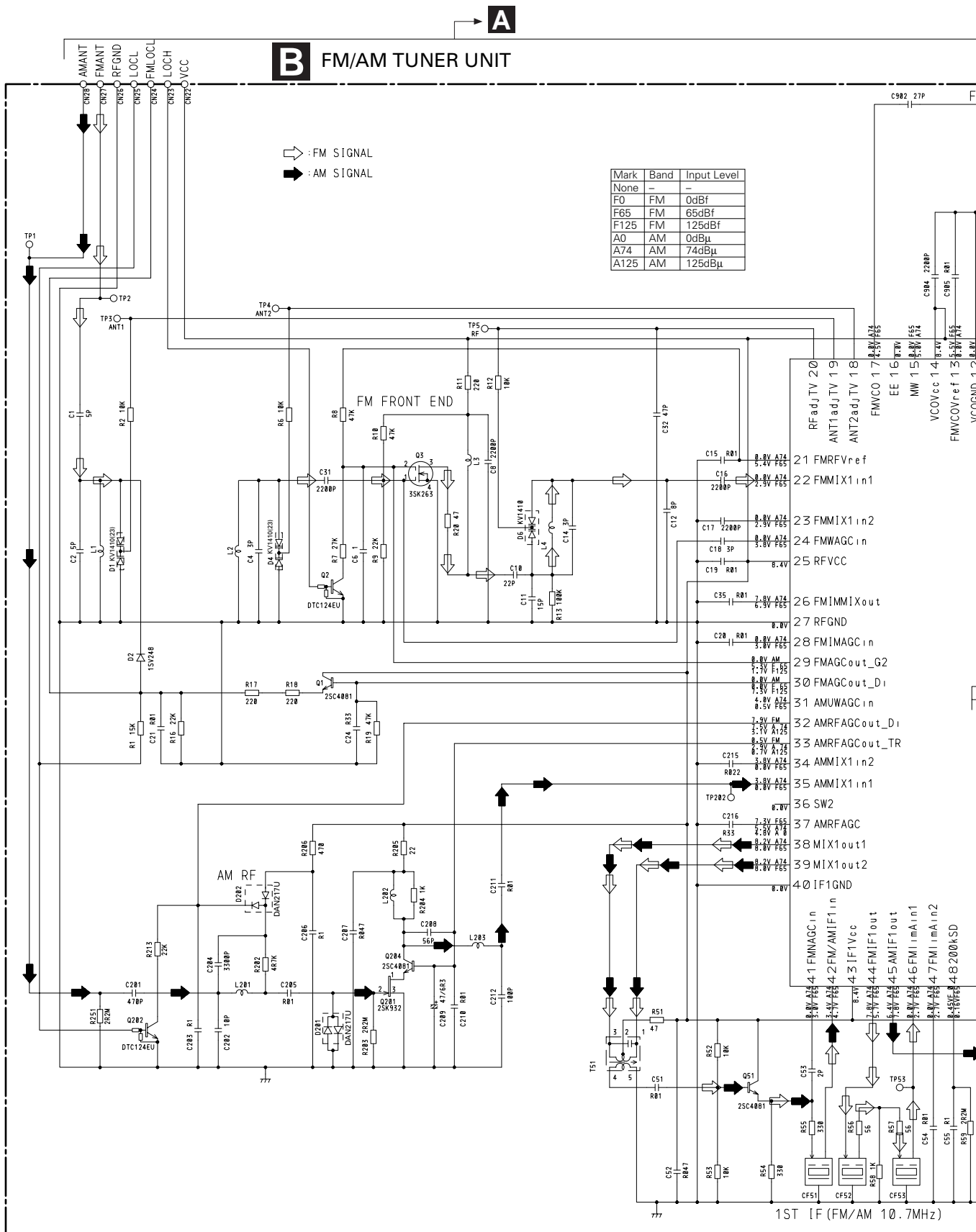


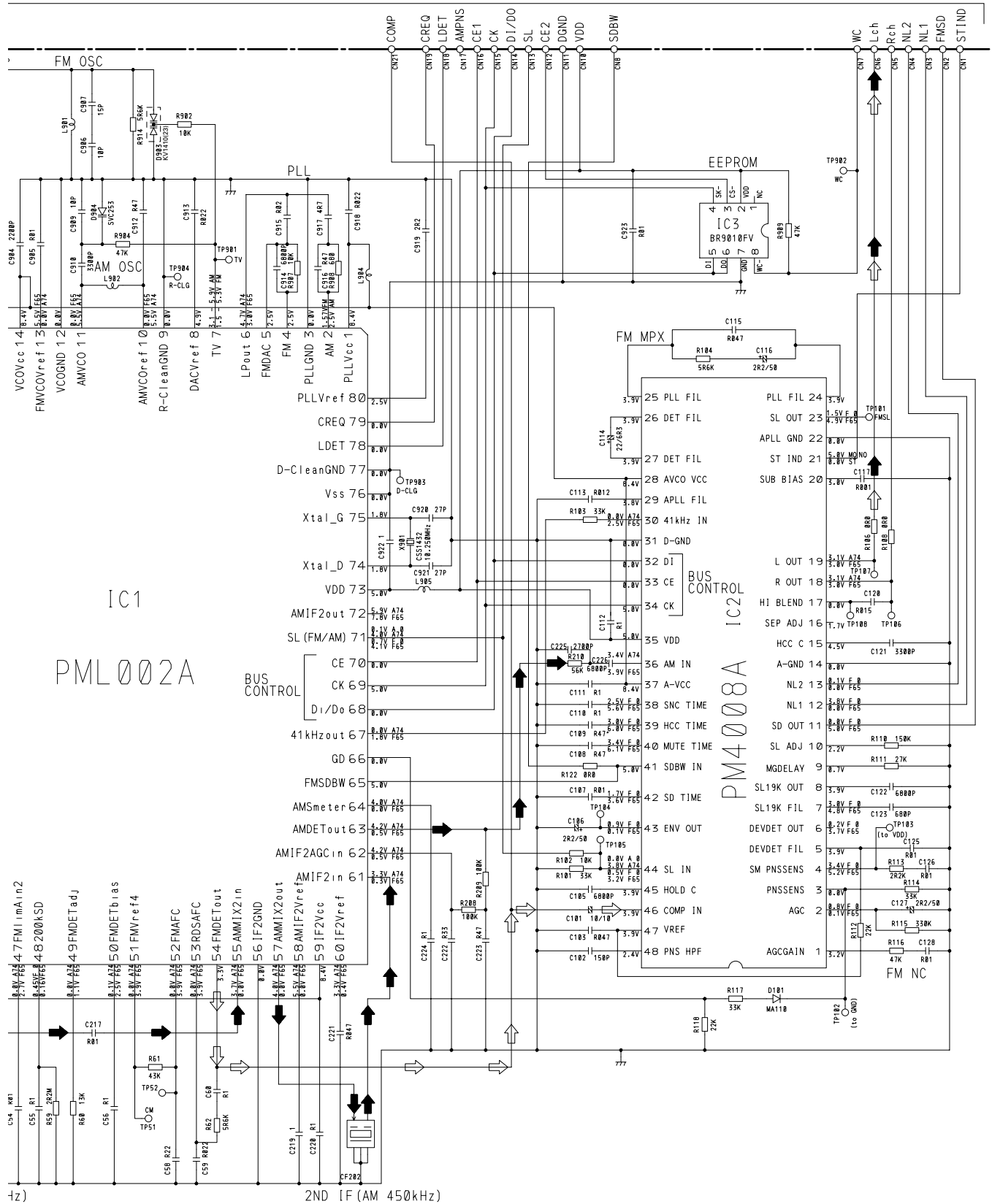






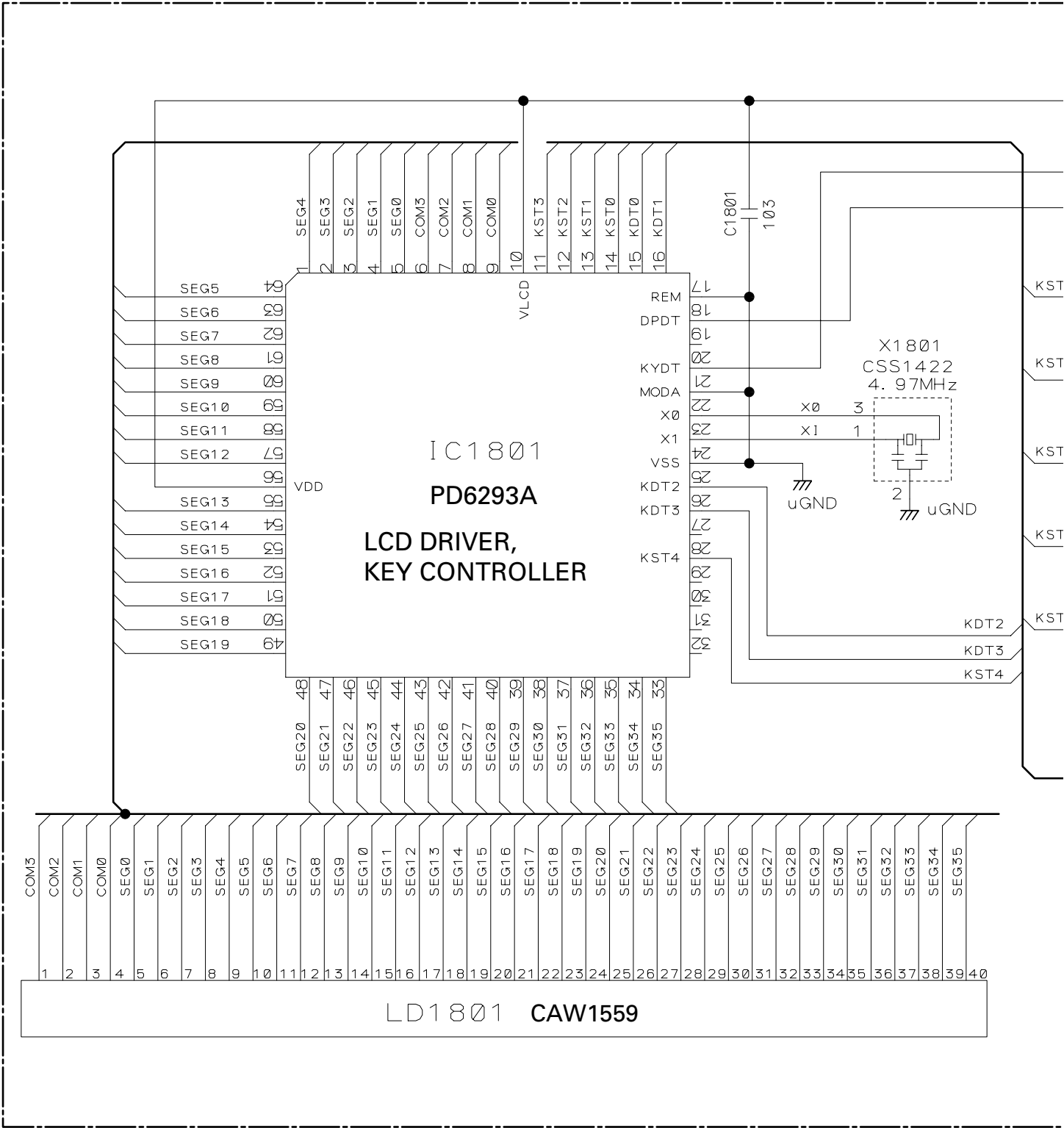
3.3 FM/AM TUNER UNIT

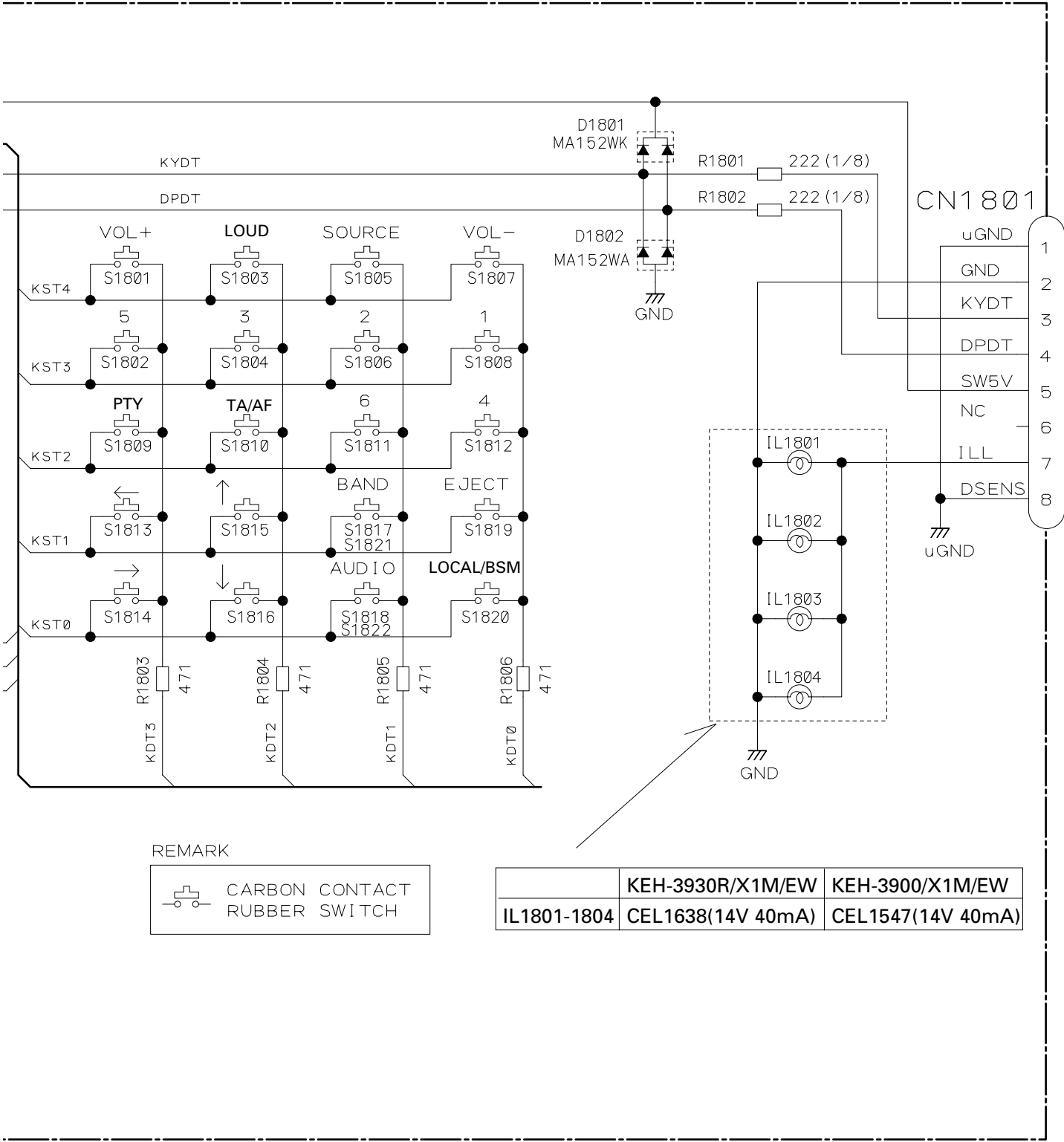




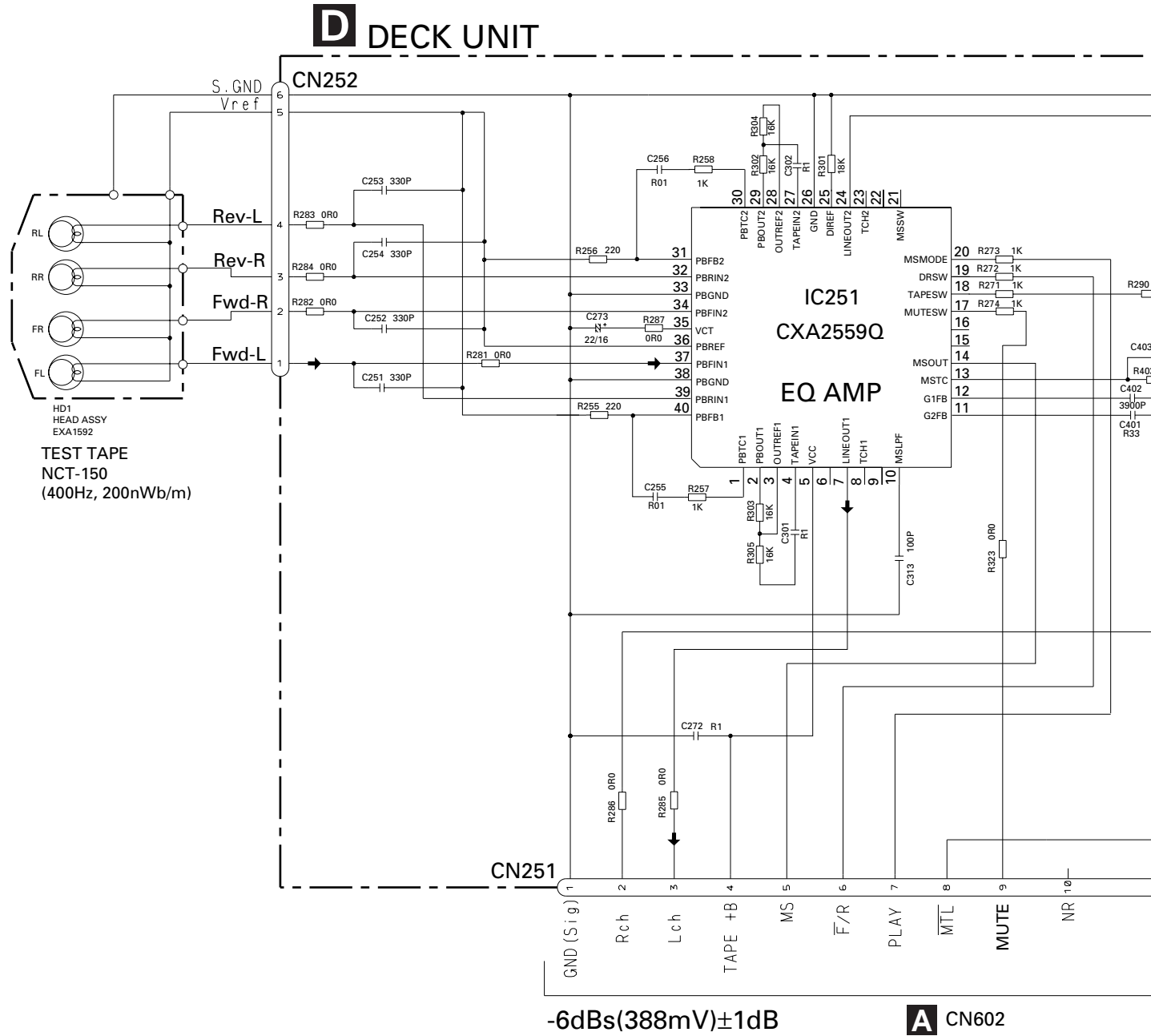
3.4 KEYBOARD UNIT

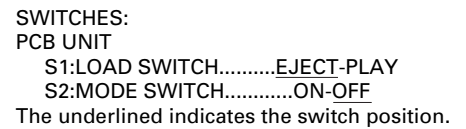
C KEYBOARD UNIT





3.5 CASSETTE MECHANISM MODULE



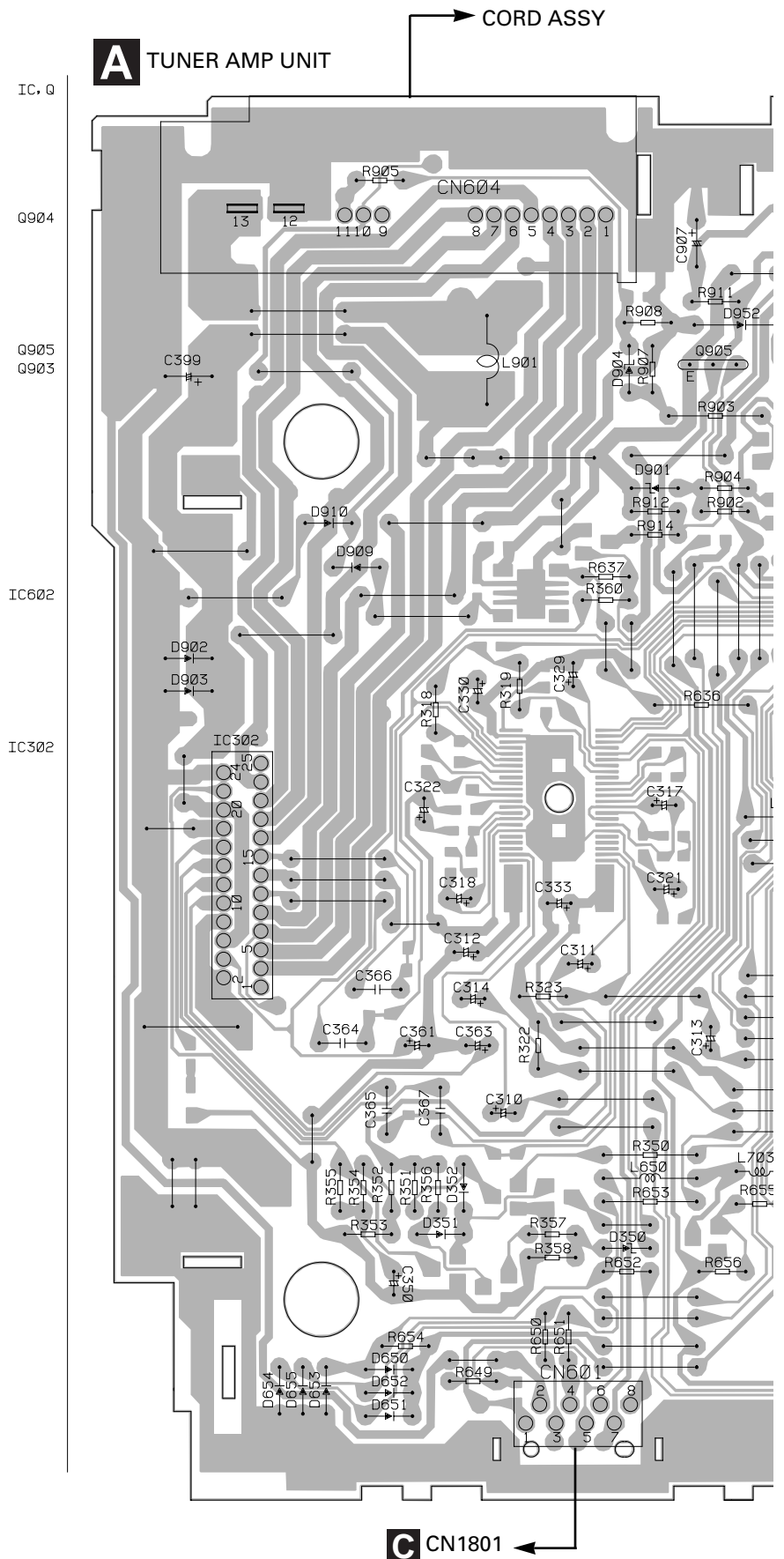
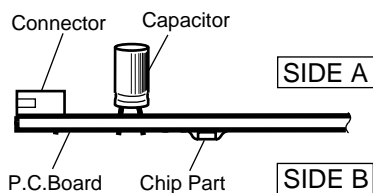


4. PCB CONNECTION DIAGRAM

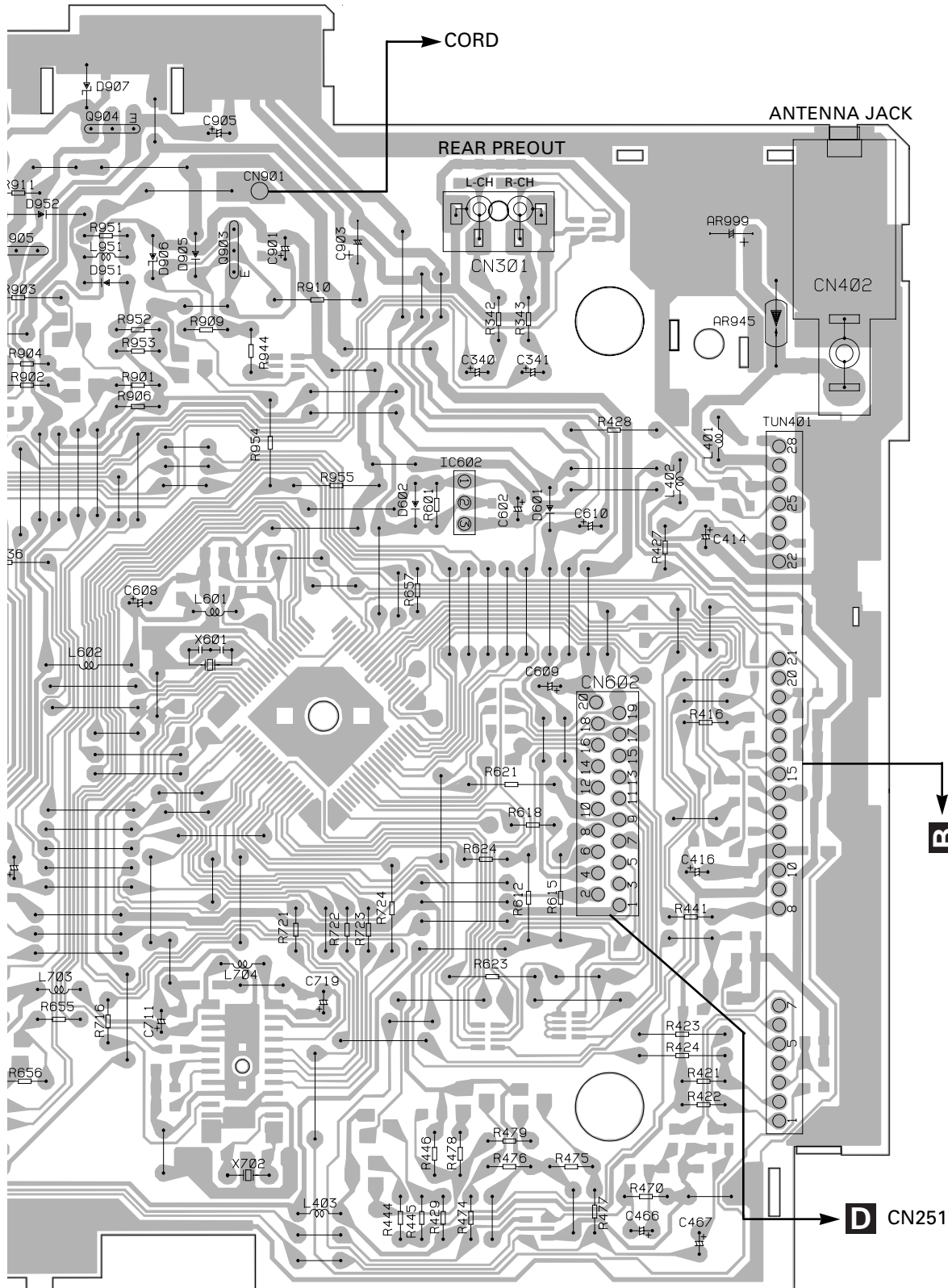
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
2. Viewpoint of PCB diagrams



SIDE A



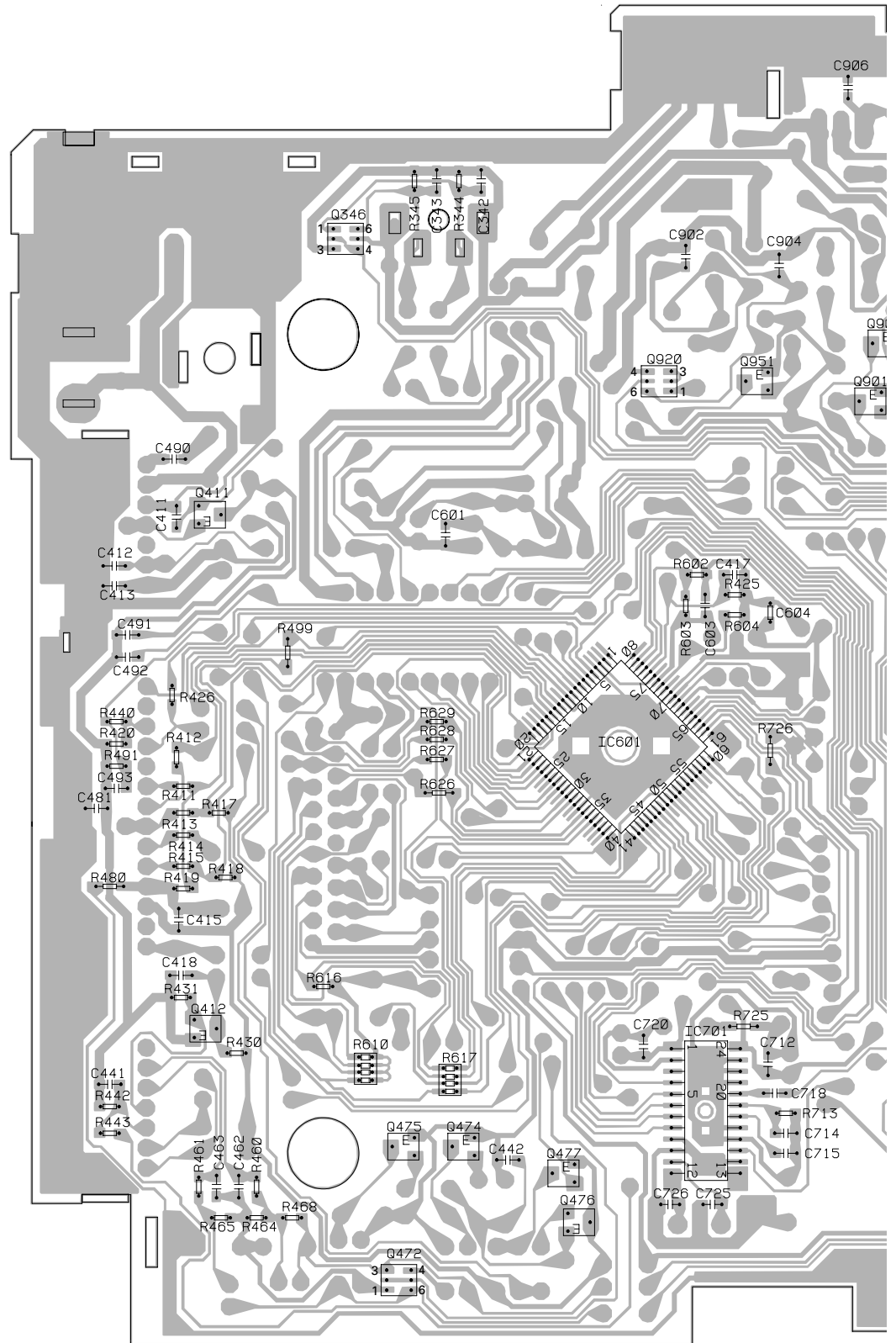
A TUNER AMP UNIT

A

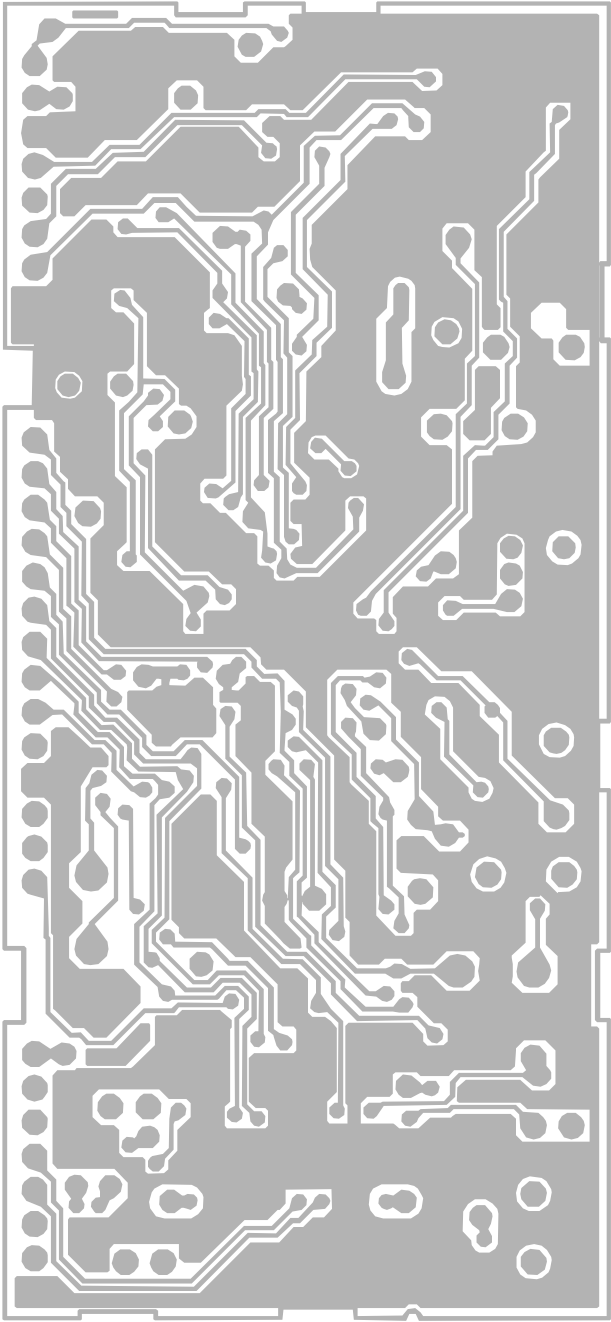
B

C

D



SIDE B



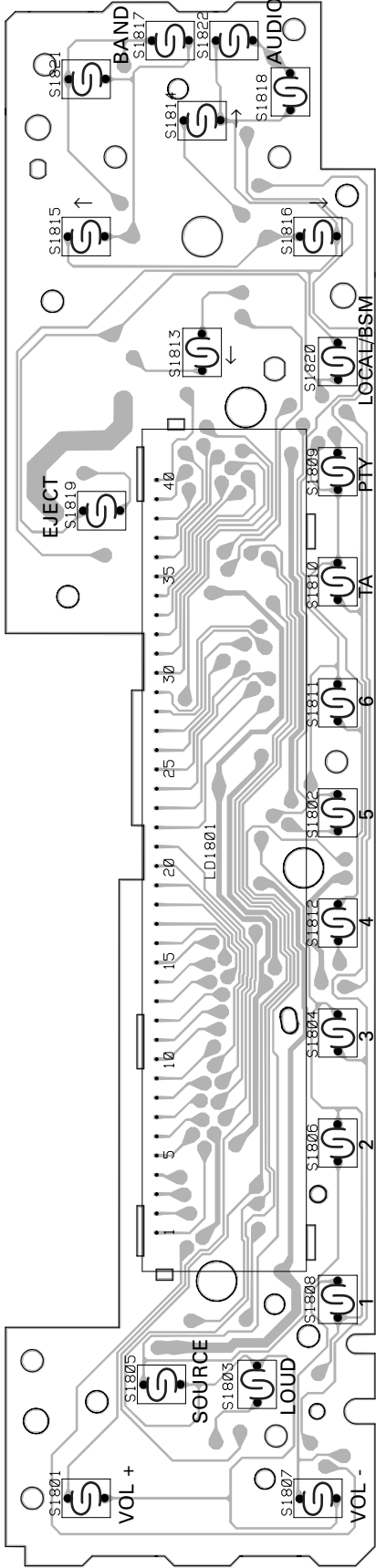
FM/AM TUNER UNIT

B

B

4.3 KEYBOARD UNIT

C KEYBOARD UNIT



SIDE A

A

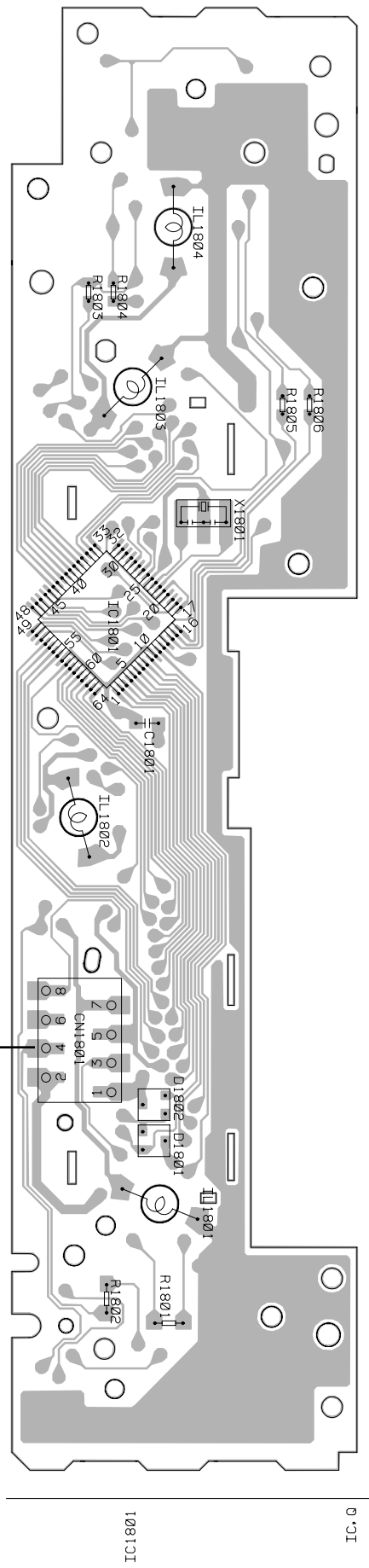
B

C

D

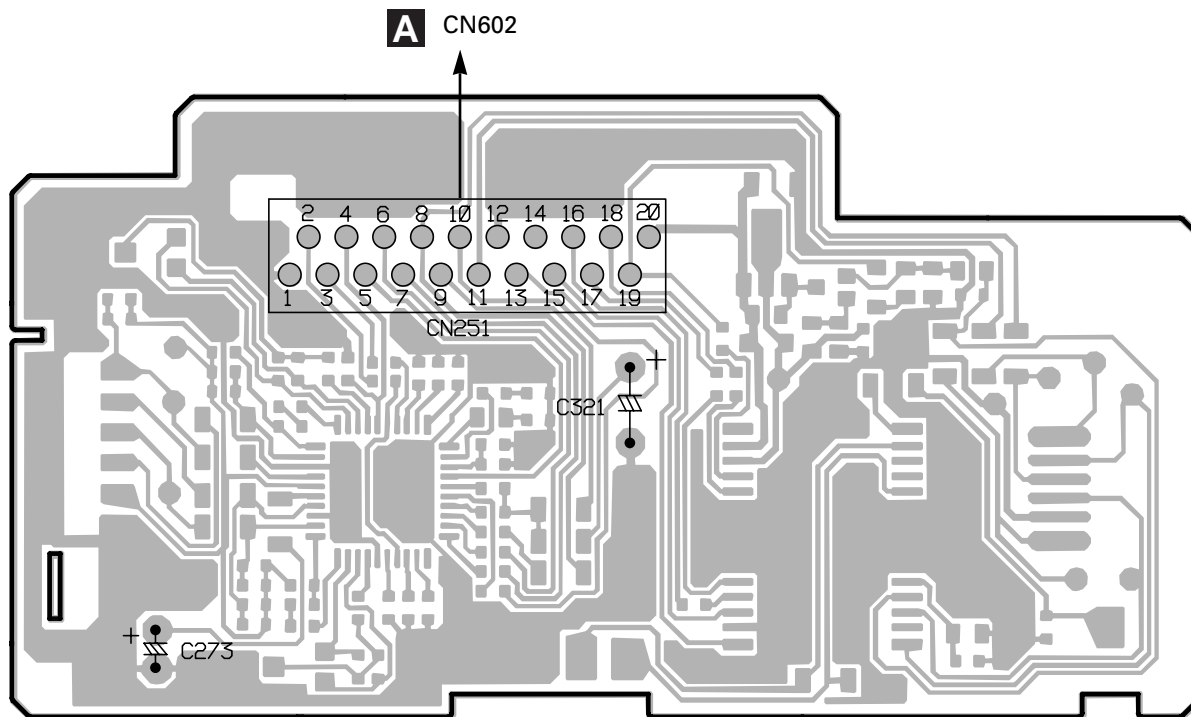
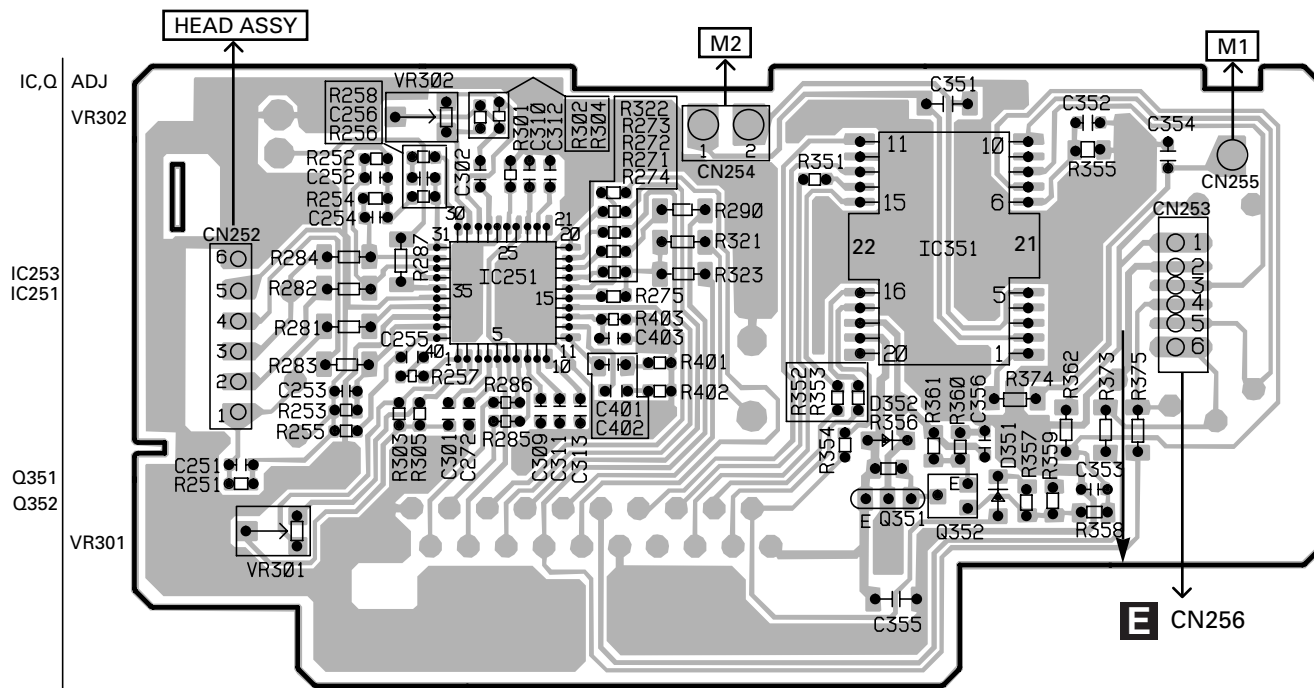
C KEYBOARD UNIT

A CN601

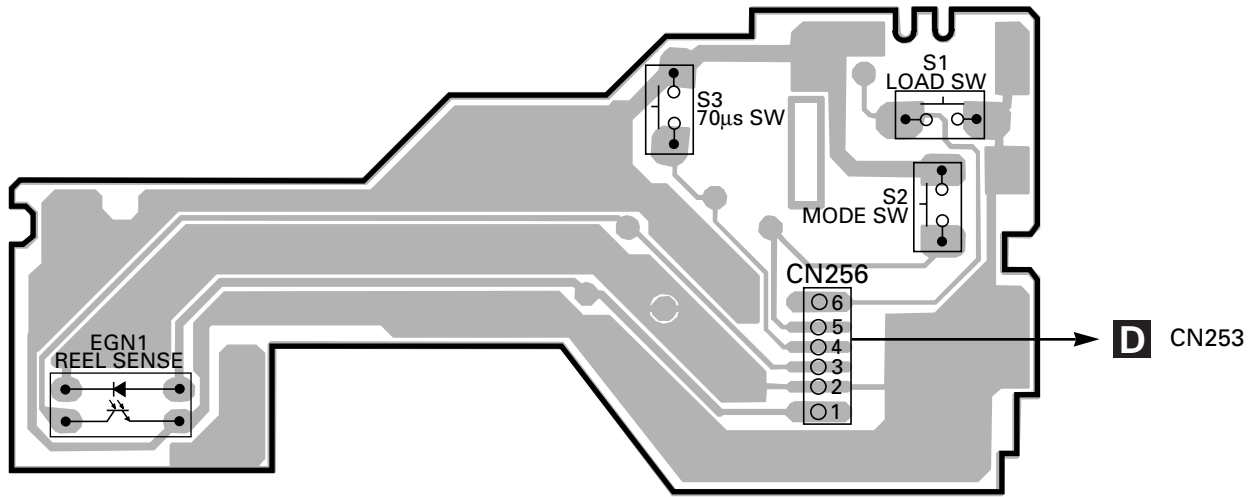


SIDE B

SIDE A

**SIDE B**

E REEL SENSE PCB



- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

RS1/○S○○○J,RS1/○○S○○○J

CKS....., CCS....., CSZS.....

32

| ====Circuit Symbol and No.==Part Name | Part No. | ====Circuit Symbol and No.==Part Name | Part No. |
|---------------------------------------|-------------|---------------------------------------|--------------|
| R 442 | RS1/10S473J | CAPACITORS | |
| R 443 | RS1/10S681J | C 310 | CEJA2R2M50 |
| R 444 | RD1/4PU472J | C 311 | CEJA2R2M50 |
| R 445 | RD1/4PU473J | C 312 | CEJA2R2M50 |
| R 446 | RD1/4PU224J | C 313 | CEJA2R2M50 |
| | | C 314 | CEJA2R2M50 |
| R 460 | RS1/10S162J | | |
| R 461 | RS1/10S162J | C 317 | CEJA100M16 |
| R 464 | RS1/10S272J | C 318 | CEJA100M16 |
| R 465 | RS1/10S272J | C 319 | CKSQYB822K50 |
| R 474 | RD1/4PU222J | C 320 | CKSQYB822K50 |
| | | C 321 | CEJA1R0M50 |
| R 475 | RD1/4PU223J | | |
| R 476 | RD1/4PU223J | C 322 | CEJA1R0M50 |
| R 477 | RD1/4PU222J | C 323 | CKSQYB183K50 |
| R 478 | RD1/4PU224J | C 324 | CKSQYB183K50 |
| R 479 | RD1/4PU224J | C 325 | CKSQYB104K16 |
| | | C 326 | CKSQYB104K16 |
| R 480 | RS1/8S0R0J | | |
| R 499 | RS1/8S0R0J | C 327 | CKSQYB104K16 |
| R 601 | RD1/4PU124J | C 328 | CKSQYB104K16 |
| R 604 | RS1/10S473J | C 329 | CEJA2R2M50 |
| R 610 | RAB4C473J | C 330 | CEJA100M16 |
| | | C 332 | CKSQYB473K50 |
| R 612 | RD1/4PU473J | | |
| R 615 | RD1/4PU103J | C 333 | CEJA470M10 |
| R 616 | RS1/10S473J | C 334 | CKSQYB104K16 |
| R 617 | RAB4C102J | C 335 | CKSQYB104K16 |
| R 618 | RD1/4PU102J | C 350 | CEJA330M10 |
| | | C 360 | CKSQYB225K10 |
| R 621 | RD1/4PU102J | | |
| R 623 | RD1/4PU102J | C 361 | CEJA1R0M50 |
| R 624 | RD1/4PU102J | C 362 | CKSYB225K16 |
| R 626 | RS1/8S102J | C 363 | CEJA100M16 |
| R 627 | RS1/10S102J | C 364 | CFTNA224J50 |
| | | C 365 | CFTNA224J50 |
| R 628 | RS1/10S102J | | |
| R 629 | RS1/10S681J | C 366 | CFTNA224J50 |
| R 637 | RD1/4PU103J | C 367 | CFTNA224J50 |
| R 649 | RD1/4PU222J | C 368 | CKSQYB104K16 |
| R 650 | RD1/4PU472J | C 399 | CCH1344 |
| | | C 411 | CKSQYB223K50 |
| R 651 | RD1/4PU222J | | |
| R 652 | RD1/4PU472J | C 412 | CKSQYB223K50 |
| R 653 | RD1/4PU222J | C 413 | CKSQYB102K50 |
| R 654 | RD1/4PU473J | C 414 | CEJA220M10 |
| R 655 | RD1/4PU752J | C 415 | CKSQYB473K50 |
| | | C 416 | CEJA101M10 |
| R 656 | RD1/4PU223J | | |
| R 657 | RD1/4PU222J | C 417 | CKSQYB472K50 |
| R 660 | RS1/10S1R0J | C 418 | CKSQYB472K50 |
| R 713 | RS1/10S225J | C 441 | CKSQYB182K50 |
| R 716 | RD1/4PU102J | C 442 | CKSQYB223K50 |
| | | C 462 | CKSQYB123K50 |
| R 721 | RD1/4PU102J | | |
| R 722 | RD1/4PU102J | C 463 | CKSQYB123K50 |
| R 723 | RD1/4PU102J | C 466 | CEJA1R0M50 |
| R 724 | RD1/4PU681J | C 467 | CEJA1R0M50 |
| R 725 | RS1/8S0R0J | C 481 | CCSQCH151J50 |
| | | C 490 | CKSQYB103K50 |
| R 726 | RS1/8S0R0J | | |
| R 901 | RD1/4PU473J | C 491 | CKSQYB102K50 |
| R 902 | RD1/4PU223J | C 492 | CCSQCH101J50 |
| R 903 | RD1/4PU223J | C 601 | CKSQYB473K50 |
| R 904 | RD1/4PU473J | C 602 | CEJA2R2M50 |
| | | C 603 | CKSQYB103K50 |
| R 905 | RD1/4PU102J | | |
| R 906 | RD1/4PU473J | C 604 | CCSQCH101J50 |
| R 907 | RD1/4PU473J | C 608 | CEJA4R7M35 |
| R 908 | RD1/4PU472J | C 609 | CEJA100M16 |
| R 909 | RD1/4PU103J | C 610 | CEJA220M10 |
| | | C 650 | CKSQYB223K50 |
| R 910 | RD1/4PU101J | | |
| R 911 | RD1/4PU122J | C 711 | CEJA220M6R3 |
| R 912 | RD1/4PU103J | C 712 | CKSQYB104K16 |
| R 914 | RD1/4PU102J | C 714 | CKSQYB471K50 |
| R 944 | RD1/4PU152J | C 715 | CKSQYB104K16 |
| | | C 718 | CKSQYB471K50 |
| R 951 | RD1/4PU153J | | |
| R 952 | RD1/4PU472J | | |
| R 953 | RD1/4PU473J | | |
| R 954 | RD1/4PU102J | | |
| R 955 | RD1/4PU473J | | |

| ====Circuit Symbol and No.==Part Name | Part No. | ====Circuit Symbol and No.==Part Name | Part No. |
|---------------------------------------|--------------|---------------------------------------|--------------|
| C 719 | CEJA220M6R3 | R 16 | RS1/16S223J |
| C 720 | CKSQYB104K16 | R 17 | RS1/16S221J |
| C 725 | CCSQCH270J50 | R 18 | RS1/16S221J |
| C 726 | CCSQCH270J50 | R 19 | RS1/16S473J |
| C 901 | CEJA101M10 | R 20 | RS1/16S470J |
| C 902 | CKSQYB473K50 | R 51 | RS1/16S470J |
| C 903 470μF/16V | CCH1183 | R 52 | RS1/16S103J |
| C 904 | CKSQYB103K50 | R 53 | RS1/16S103J |
| C 905 330μF/10V | CCH1181 | R 54 | RS1/16S331J |
| C 906 | CKSQYB103K50 | R 55 | RS1/16S331J |
| C 907 100μF/16V | CCH1179 | R 56 | RS1/16S560J |
| C 908 | CKSQYB103K50 | R 57 | RS1/16S560J |
| C 910 | CKSQYB473K50 | R 58 | RS1/16S102J |
| | | R 59 | RS1/16S225J |
| | | R 60 | RS1/16S133J |
| | | R 61 | RS1/16S433J |
| | | R 62 | RS1/16S562J |
| | | R 101 | RS1/16S333J |
| | | R 102 | RS1/16S103J |
| | | R 103 | RS1/16S333J |
| | | R 104 | RS1/16S562J |
| | | R 106 | RS1/16S0R0J |
| | | R 108 | RS1/16S0R0J |
| | | R 110 | RS1/16S154J |
| | | R 111 | RS1/16S273J |
| | | R 112 | RS1/16S223J |
| | | R 113 | RS1/16S222J |
| | | R 114 | RS1/16S333J |
| | | R 115 | RS1/16S334J |
| | | R 116 | RS1/16S473J |
| | | R 117 | RS1/16S333J |
| | | R 118 | RS1/16S223J |
| | | R 122 | RS1/16S0R0J |
| | | R 202 | RS1/16S472J |
| | | R 203 | RS1/16S225J |
| | | R 204 | RS1/16S102J |
| | | R 205 | RS1/16S220J |
| | | R 206 | RS1/16S471J |
| | | R 208 | RS1/16S104J |
| | | R 209 | RS1/16S104J |
| | | R 210 | RS1/16S563J |
| | | R 213 | RS1/16S223J |
| | | R 251 | RS1/16S225J |
| | | R 902 | RS1/16S103J |
| | | R 904 | RS1/16S473J |
| | | R 907 | RS1/16S103J |
| | | R 908 | RS1/16S681J |
| | | R 909 | RS1/16S473J |
| | | R 914 | RS1/16S562J |
| | | CAPACITORS | |
| | | C 1 | CCSQCH5R0C50 |
| | | C 2 | CCSRCH5R0C50 |
| | | C 4 | CCSRCJ3R0C50 |
| | | C 6 | CKSQYB105K10 |
| | | C 8 | CKSRYB222K50 |
| | | C 10 | CCSRCH220J50 |
| | | C 11 | CCSRCH150J50 |
| | | C 12 | CCSRCH8R0D50 |
| | | C 14 | CCSRCJ3R0C50 |
| | | C 15 | CKSRYB103K50 |
| | | C 16 | CKSRYB222K50 |
| | | C 17 | CKSRYB222K50 |
| | | C 18 | CCSRCJ3R0C50 |
| | | C 19 | CKSRYB103K50 |
| | | C 20 | CKSRYB103K50 |
| RESISTORS | | | |
| R 1 | RS1/16S153J | | |
| R 2 | RS1/16S103J | | |
| R 6 | RS1/16S103J | | |
| R 7 | RS1/16S273J | | |
| R 8 | RS1/16S473J | | |
| R 9 | RS1/16S223J | | |
| R 10 | RS1/16S473J | | |
| R 11 | RS1/16S221J | | |
| R 12 | RS1/16S103J | | |
| R 13 | RS1/16S104J | | |

B Unit Number : CWE1500
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

| | | |
|--------|-----------------------------|--------------|
| IC 1 | IC | PML002A |
| IC 2 | IC | PM4008A |
| IC 3 | IC | BR9010FV |
| Q 1 | Transistor | 2SC4081 |
| Q 2 | Transistor | DTC124EU |
| Q 3 | FET | 3SK263 |
| Q 51 | Transistor | 2SC4081 |
| Q 201 | FET | 2SK932 |
| Q 202 | Transistor | DTC124EU |
| Q 204 | Transistor | 2SC4081 |
| D 1 | Diode | KV1410(23) |
| D 2 | Diode | 1SV248 |
| D 4 | Diode | KV1410(23) |
| D 6 | Diode | KV1410(23) |
| D 101 | Diode | 1SS355 |
| D 201 | Diode | DAN217U |
| D 202 | Diode | DAN217U |
| D 903 | Diode | KV1410(23) |
| D 904 | Diode | SVC253 |
| L 1 | Coil | CTC1155 |
| L 2 | Coil | CTC1155 |
| L 3 | Inductor | LCTB100K2125 |
| L 4 | Coil | CTC1155 |
| L 201 | Inductor | LCTB330K1608 |
| L 202 | Inductor | CTF1287 |
| L 203 | Inductor | LCTA121J3225 |
| L 901 | Coil | CTC1154 |
| L 902 | Inductor | LCTA3R3J3225 |
| L 904 | Inductor | LCTBR47K1608 |
| L 905 | Inductor | LCTBR47K1608 |
| T 51 | Coil | CTE1132 |
| CF 51 | Ceramic Filter | CTF1442 |
| CF 52 | Ceramic Filter | CTF1442 |
| CF 53 | Ceramic Filter | CTF1442 |
| CF 202 | Ceramic Filter | CTF1348 |
| X 901 | Crystal Resonator 10.250MHz | CSS1432 |

RESISTORS

| | |
|------|-------------|
| R 1 | RS1/16S153J |
| R 2 | RS1/16S103J |
| R 6 | RS1/16S103J |
| R 7 | RS1/16S273J |
| R 8 | RS1/16S473J |
| R 9 | RS1/16S223J |
| R 10 | RS1/16S473J |
| R 11 | RS1/16S221J |
| R 12 | RS1/16S103J |
| R 13 | RS1/16S104J |

| ====Circuit Symbol and No.====Part Name | Part No. |
|---|--------------|
| C 21 | CKSRYP103K50 |
| C 24 | CKSQYB334K16 |
| C 31 | CKSRYP222K50 |
| C 32 | CCSRCH470J50 |
| C 35 | CKSRYP103K50 |
| C 51 | CKSRYP103K50 |
| C 52 | CKSRYP473K16 |
| C 53 | CCSRCK2R0C50 |
| C 54 | CKSRYP103K50 |
| C 55 | CKSRYP104K16 |
| C 56 | CKSRYP104K16 |
| C 58 | CKSQYB224K16 |
| C 59 | CKSRYP223K25 |
| C 60 | CKSRYP104K16 |
| C 101 | CEALNP100M10 |
| C 102 | CCSRCH151J50 |
| C 103 | CKSRYP473K16 |
| C 105 | CKSRYP682K25 |
| C 106 | CEAL2R2M50 |
| C 107 | CKSRYP103K50 |
| C 108 | CKSQYB474K16 |
| C 109 | CKSQYB474K16 |
| C 110 | CKSRYP104K16 |
| C 111 | CKSRYP104K16 |
| C 112 | CKSRYP104K16 |
| C 113 | CKSRYP123K25 |
| C 114 | CEAL220M6R3 |
| C 115 | CKSRYP473K16 |
| C 116 | CEAL2R2M50 |
| C 117 | CKSRYP102K50 |
| C 120 | CKSRYP153K25 |
| C 121 | CKSRYP332K50 |
| C 122 | CKSRYP682K25 |
| C 123 | CKSRYP681K50 |
| C 125 | CKSRYP103K50 |
| C 126 | CKSRYP103K50 |
| C 127 | CEAL2R2M50 |
| C 128 | CKSRYP103K50 |
| C 201 | CCSRCH471J50 |
| C 202 | CCSRCH100D50 |
| C 203 | CKSRYP104K16 |
| C 204 | CKSRYP332K50 |
| C 205 | CKSRYP103K50 |
| C 206 | CKSRYP104K16 |
| C 207 | CKSRYP473K16 |
| C 208 | CCSRCH560J50 |
| C 209 | CEAL470M6R3 |
| C 210 | CKSRYP103K50 |
| C 211 | CKSRYP103K50 |
| C 212 | CCSRCH101J50 |
| C 215 | CKSRYP223K25 |
| C 216 | CKSQYB334K16 |
| C 217 | CKSRYP103K50 |
| C 219 | CKSQYB105K10 |
| C 220 | CKSRYP104K16 |
| C 221 | CKSRYP473K16 |
| C 222 | CKSQYB334K16 |
| C 223 | CKSQYB474K16 |
| C 224 | CKSRYP104K16 |
| C 225 | CKSRYP272K50 |
| C 226 | CKSRYP682K25 |
| C 902 | CCSRCH270J50 |
| C 904 | CKSRYP223K25 |
| C 905 | CKSRYP103K50 |
| C 906 | CCSRTH100D50 |
| C 907 | CCSRTH150J50 |
| C 909 | CCSRTH100D50 |
| C 910 | CKSRYP332K50 |
| C 912 | CKSQYB474K16 |
| C 913 | CKSRYP223K25 |

| ====Circuit Symbol and No.====Part Name | Part No. |
|---|--------------|
| C 914 | CKSRYP682K25 |
| C 915 | CKSQYB223K25 |
| C 916 | CKSQYB474K16 |
| C 917 | CKSYB475K10 |
| C 918 | CKSRYP223K25 |
| C 919 | CKSQYB225K10 |
| C 920 | CCSRCH270J50 |
| C 921 | CCSRCH270J50 |
| C 922 | CKSYB105K16 |
| C 923 | CKSRYP103K50 |

C Unit Number : CWM6813
(KEH-3930R/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

| | | |
|---------|---------------------------|---------|
| IC 1801 | IC | PD6293A |
| D 1801 | Diode | MA152WK |
| D 1802 | Diode | MA152WA |
| X 1801 | Ceramic Resonator 4.97MHz | CSS1422 |
| IL 1801 | Lamp 14V 40mA | CEL1638 |
| IL 1802 | Lamp 14V 40mA | CEL1638 |
| IL 1803 | Lamp 14V 40mA | CEL1638 |
| IL 1804 | Lamp 14V 40mA | CEL1638 |
| LCD1801 | LCD | CAW1559 |

RESISTORS

| | |
|--------|-------------|
| R 1801 | RS1/8S222J |
| R 1802 | RS1/8S222J |
| R 1803 | RS1/10S471J |
| R 1804 | RS1/10S471J |
| R 1805 | RS1/10S471J |
| R 1806 | RS1/10S471J |

CAPACITORS

| | |
|--------|--------------|
| C 1801 | CKSQYB103K50 |
|--------|--------------|

C Unit Number : CWM6812
(KEH-3900R/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

| | | |
|---------|---------------------------|---------|
| IC 1801 | IC | PD6293A |
| D 1801 | Diode | MA152WK |
| D 1802 | Diode | MA152WA |
| X 1801 | Ceramic Resonator 4.97MHz | CSS1422 |
| IL 1801 | Lamp 14V 40mA | CEL1547 |
| IL 1802 | Lamp 14V 40mA | CEL1547 |
| IL 1803 | Lamp 14V 40mA | CEL1547 |
| IL 1804 | Lamp 14V 40mA | CEL1547 |
| LCD1801 | LCD | CAW1559 |

RESISTORS

| | |
|--------|-------------|
| R 1801 | RS1/8S222J |
| R 1802 | RS1/8S222J |
| R 1803 | RS1/10S471J |
| R 1804 | RS1/10S471J |
| R 1805 | RS1/10S471J |
| R 1806 | RS1/10S471J |

CAPACITORS

| | |
|--------|--------------|
| C 1801 | CKSQYB103K50 |
|--------|--------------|

| ====Circuit Symbol and No.==Part Name | Part No. |
|---|-------------|
| D Unit Number : EWM1023 Unit Name : Deck Unit | |
| MISCELLANEOUS | |
| IC 251 IC | CXA2559Q |
| IC 351 IC | PA2020A |
| D 352 Diode | 1SS355 |
| RESISTORS | |
| R 255 | RS1/16S221J |
| R 256 | RS1/16S221J |
| R 257 | RS1/16S102J |
| R 258 | RS1/16S102J |
| R 271 | RS1/16S102J |
| R 272 | RS1/16S102J |
| R 273 | RS1/16S102J |
| R 274 | RS1/16S102J |
| R 281 | RS1/8S0R0J |
| R 282 | RS1/8S0R0J |
| R 283 | RS1/8S0R0J |
| R 284 | RS1/8S0R0J |
| R 285 | RS1/16S0R0J |
| R 286 | RS1/16S0R0J |
| R 287 | RS1/8S0R0J |
| R 290 | RS1/8S0R0J |
| R 301 | RS1/16S183J |
| R 302 | RS1/16S163J |
| R 303 | RS1/16S163J |
| R 304 | RS1/16S163J |
| R 305 | RS1/16S163J |
| R 323 | RS1/8S0R0J |
| R 351 | RS1/16S102J |
| R 352 | RS1/16S102J |
| R 353 | RS1/16S102J |
| R 354 | RS1/16S102J |
| R 355 | RS1/10S274J |
| R 362 | RS1/8S301J |
| R 373 | RS1/8S0R0J |
| R 374 | RS1/8S0R0J |
| R 401 | RS1/16S472J |
| R 402 | RS1/16S183J |
| R 403 | RS1/16S823J |

| ====Circuit Symbol and No.==Part Name | Part No. |
|---------------------------------------|--------------|
| CAPACITORS | |
| C 251 | CKSRYB331K50 |
| C 252 | CKSRYB331K50 |
| C 253 | CKSRYB331K50 |
| C 254 | CKSRYB331K50 |
| C 255 | CKSRYB103K50 |
| C 256 | CKSRYB103K50 |
| C 272 | CKSRYB104K16 |
| C 273 | CEJA220M16 |
| C 301 | CKSRYB104K16 |
| C 302 | CKSRYB104K16 |
| C 313 | CCSRCH101J50 |
| C 351 | CKSYB224K25 |
| C 352 | CKSRYB392K50 |
| C 353 | CKSRYB103K50 |
| C 354 | CKSRYB103K50 |
| C 355 | CKSYB104K50 |
| C 356 | CKSRYB103K50 |
| C 401 | CKSQYB334K16 |
| C 402 | CKSRYB392K50 |
| C 403 | CKSRYB683K16 |

| | |
|------------------------|----------------|
| E Unit Number : | |
| Unit Name : | REEL SENSE PCB |
| S 1 Switch(LOAD) | ESG1007 |
| S 2 Switch(MODE) | ESG1007 |
| EGN 1 Photo-reflector | EGN1004 |

| | |
|--------------------------|---------|
| Miscellaneous Parts List | |
| M 1 Motor Unit(MAIN) | EXA1491 |
| M 2 Motor Unit(SUB) | EXA1580 |
| HD 1 Head Assy | EXA1592 |
| Fuse(10A) | CEK1136 |

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1. DISASSEMBLY



● Remove the Case(not shown)

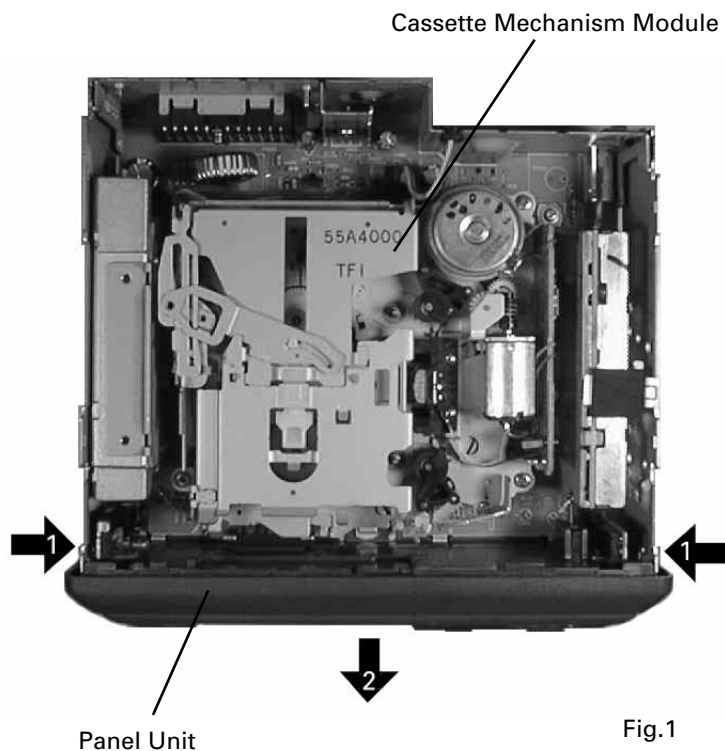
- 1.Remove the two screws.
- 2.Remove the Case.

● Remove the Cassette Mechanism Module (not shown)





- 1.Remove the four screws.
- 2.Disconnect the connector, and then remove the Cassette Mechanism module.

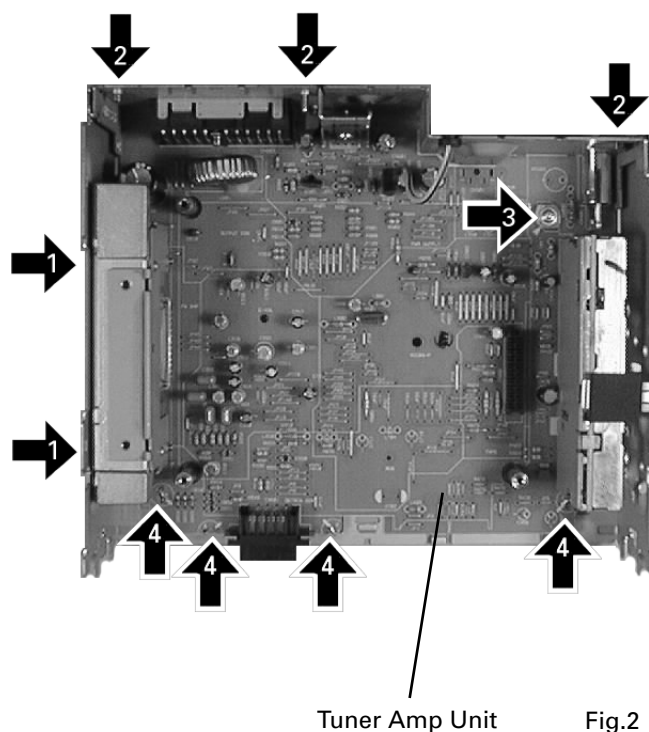
● Remove the Panel Unit(Fig.1)

-  1 Disengage the stopper at two locations indicated by arrow.
-  2 Remove the Panel Unit.



● Remove the Tuner Amp Unit(Fig.2)

-  1 Remove the two screws.
-  2 Remove the three screws.
-  3 Remove the screw.
-  4 Unbend the tabs at four locations indicated by arrow until straight. Remove the Tuner Amp Unit.



7.2 PARTS

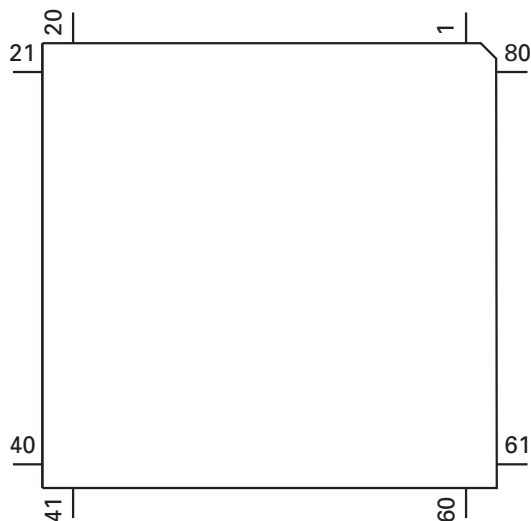
7.2.1 IC

● Pin Functions (PE5088A)

| Pin No. | Pin Name | I/O | Format | Function and Operation |
|---------|----------|-----|--------|---|
| 1,2 | NC | | | Not used |
| 3 | ADPW | O | C | A/D converter power supply output |
| 4 | AVSS | | | GND |
| 5 | SWVDD | O | C | Grille power supply control output |
| 6 | ST | I | | FM stereo input |
| 7 | AVREF1 | | | Connected to 5V line |
| 8 | KYDT | I | | Key data input |
| 9 | DPDT | O | C | Display data output |
| 10 | SDBW | I | | SDBW input |
| 11 | TUNPDI | I | | PLL IC data input |
| 12 | TUNPDO | O | C | PLL IC data output |
| 13 | TUNPCK | O | C | PLL IC clock output |
| 14 | TUNPCE | O | C | PLL IC chip enable output |
| 15 | CURRQ | O | C | Tuner voltage FIX output |
| 16-18 | NC | | | Not used |
| 19 | RECIVE | O | C | During RDS data reception output |
| 20 | PCE2 | O | C | PLL IC chip enable output |
| 21 | FM/AM | O | C | FM/AM power select output |
| 22 | VST | O | C | Strobe pulse output for electronic volume |
| 23 | VCK | O | C | Clock output for electronic volume |
| 24 | VDT | O | C | Data output for electronic volume |
| 25 | LCDPW | O | C | LCD back light power supply control output |
| 26 | ILMPW | O | C | Illumination power supply control output |
| 27 | LOCH | O | C | LOCH output |
| 28 | LOCL | O | C | LOCL output |
| 29 | NC | | | Not used |
| 30 | RIMUTE | O | N | RI output port |
| 31 | CM | O | C | Cassette mechanism capstan motor control output |
| 32 | NR | O | N | Dolby B NR output |
| 33 | VSS | | | GND |
| 34 | SC2 | O | C | Cassette mechanism sub motor control output |
| 35 | SC1 | O | C | Cassette mechanism sub motor control output |
| 36 | MSIN | I | | Cassette mechanism MS sense input |
| 37-39 | NC | | | Not used |
| 40 | N/R | O | | Tape direction forward / reverse output |
| 41 | PLAY | O | C | Tape MS filter select output |
| 42 | LOADSW | I | | Tape loading input |
| 43 | POS | I | | Cassette mechanism position sense input |
| 44 | RES | I | | Cassette mechanism reverse end sense input |
| 45 | PEE | O | C | Beep tone output |
| 46 | NES | I | | Cassette mechanism forward end sense input |
| 47 | RDS57K | I | | 57kHzBP-OUT sense input |
| 48 | STBY | O | C | Stand-by output |
| 49 | NC | | | Not used |
| 50 | DRST | O | C | Decoder reset output |
| 51 | TMUTE | O | C | Tuner mute output |
| 52 | ANTPW | O | | Antenna power output |
| 53 | SD | I | | SD input |
| 54 | MUTE | O | C | Mute output |
| 55 | SYSPW | O | C | System power supply control output |
| 56,57 | NC | | | Not used |
| 58 | RDSLK | I | | RDS LK signal input |
| 59 | RDT | I | | RDS data input |
| 60 | RESET | I | | Reset input |
| 61 | LDET | I | | PLL lock sense input |

| Pin No. | Pin Name | I/O | Format | Function and Operation |
|---------|----------|-----|--------|---|
| 62 | RCK | I | | RDS clock input |
| 63 | DSENS | I | | Grille detach sense input |
| 64 | TELIN | I | | Telephone mute input |
| 65 | ASENS | I | | ACC power sense input |
| 66 | BSSENS | I | | Back up power sense input |
| 67 | NC | | | Not used |
| 68 | VDD | | | VDD |
| 69 | X2 | O | | Oscillator output |
| 70 | X1 | I | | Oscillator input |
| 71 | GND | | | Connect to GND |
| 72 | NC | | | Not used |
| 73 | TESTIN | I | | Test program mode input |
| 74 | AVDD | | | A/D converter analog power supply (VDD) |
| 75 | AVREF0 | I | | A/D converter standard voltage input |
| 76 | SL | I | | Signal level input |
| 77 | MODELIN | I | | Model select input |
| 78 | NL1 | I | | Noise level 1 input |
| 79 | NL2 | I | | Noise level 2 input |
| 80 | NC | | | Not used |

*PE5088A

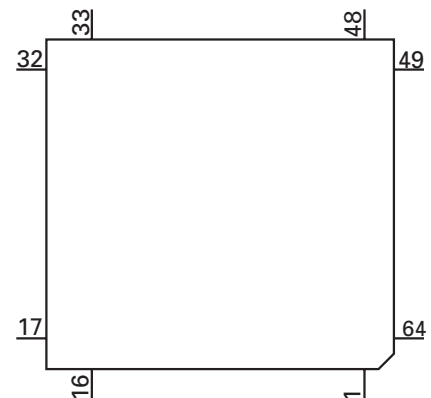


| Format | Meaning |
|--------|----------------------|
| C | C MOS |
| N | N Channel open drain |

IC's marked by* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

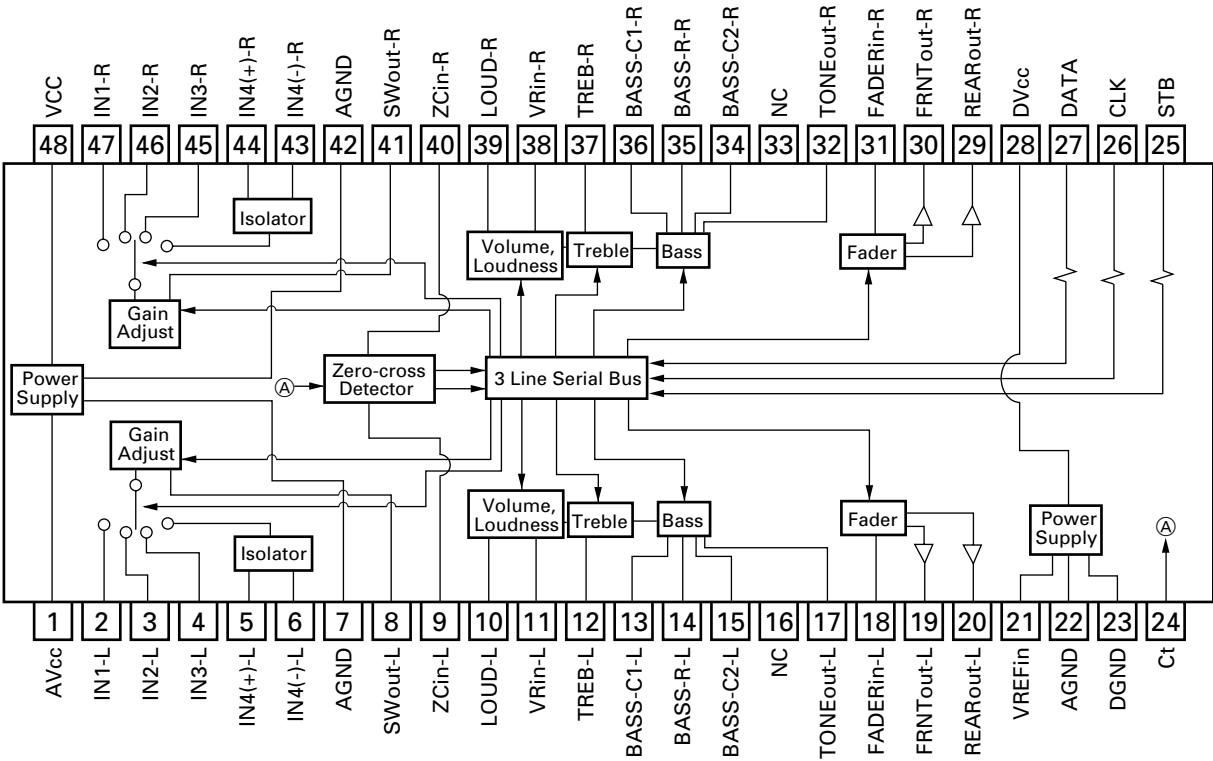
*PD6293A



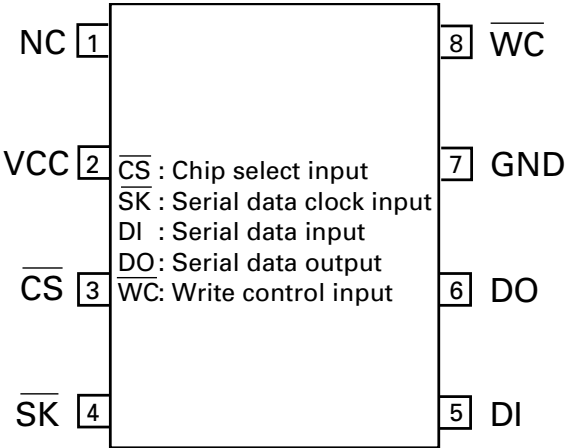
● Pin Functions (PD6293A)

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|-----|-----------------------------------|
| 1-5 | SEG4-0 | O | LCD segment output |
| 6-9 | COM3-0 | O | LCD common output |
| 10 | VLCD | | LCD drive power supply |
| 11-14 | KST3-0 | O | Key strobe output |
| 15,16 | KDT0,1 | I | Key data input (analogue input) |
| 17 | REM | I | Remote control reception |
| 18 | DPDT | I | Display data input |
| 19 | NC | | Not used |
| 20 | KYDT | O | Key data output |
| 21 | MODA | | GND |
| 22 | X0 | | Crystal oscillator connection pin |
| 23 | X1 | | Crystal oscillator connection pin |
| 24 | VSS | | GND |
| 25,26 | KDT2,3 | I | Key data input |
| 27 | NC | | Not used |
| 28 | KST4 | O | Key strobe output |
| 29-32 | NC | | Not used |
| 33-55 | SEG35-13 | O | LCD segment output |
| 56 | VDD | | Power supply |
| 57-64 | SEG12-5 | O | LCD segment output |

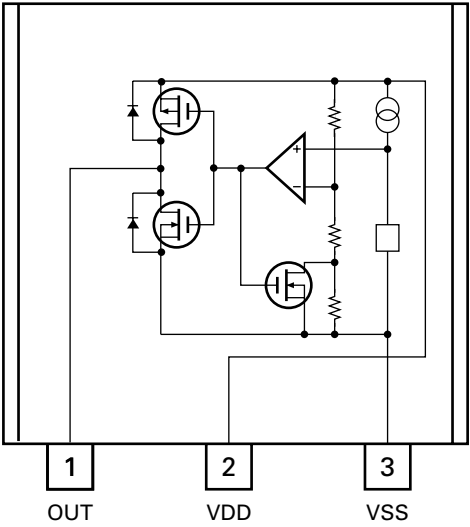
SN761029DL



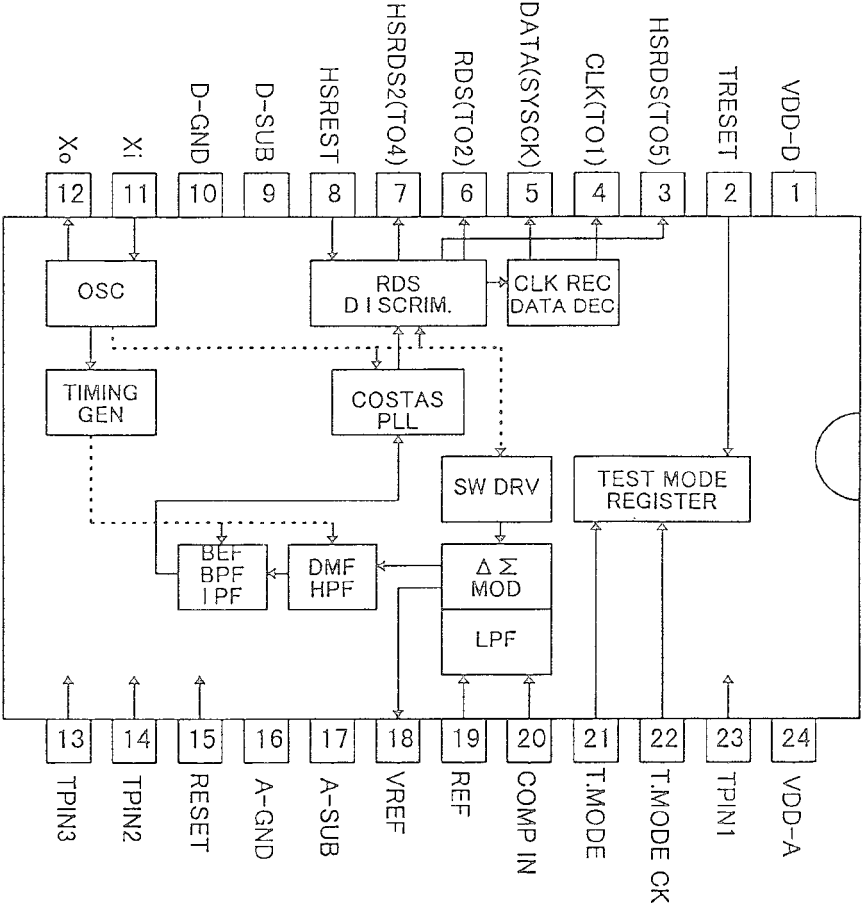
BR9010FV



S-80834ANY



PM4009A

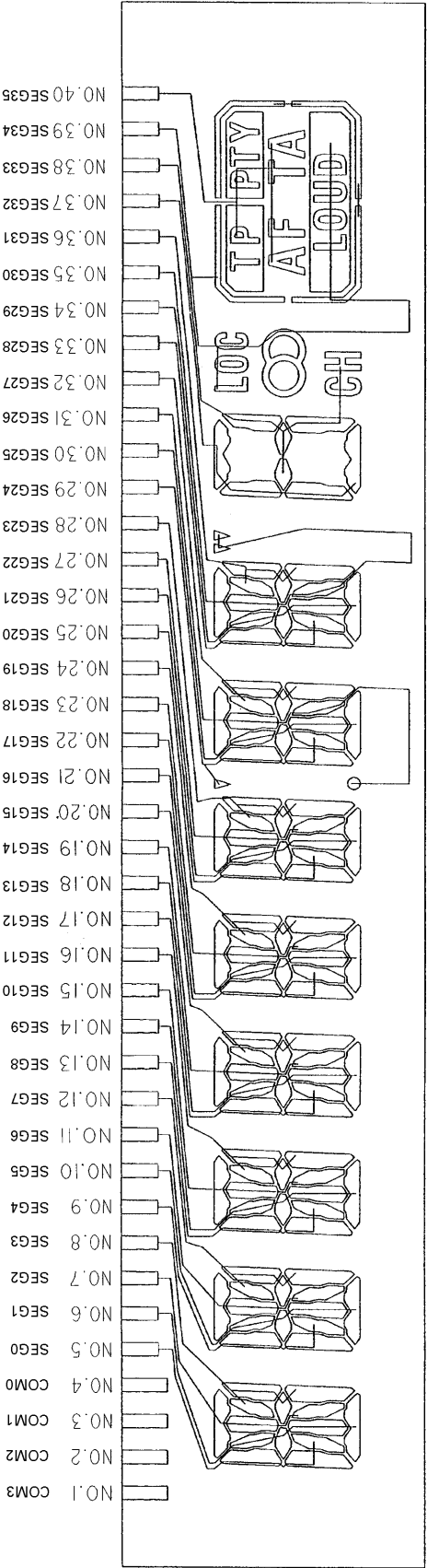


SEGMENT

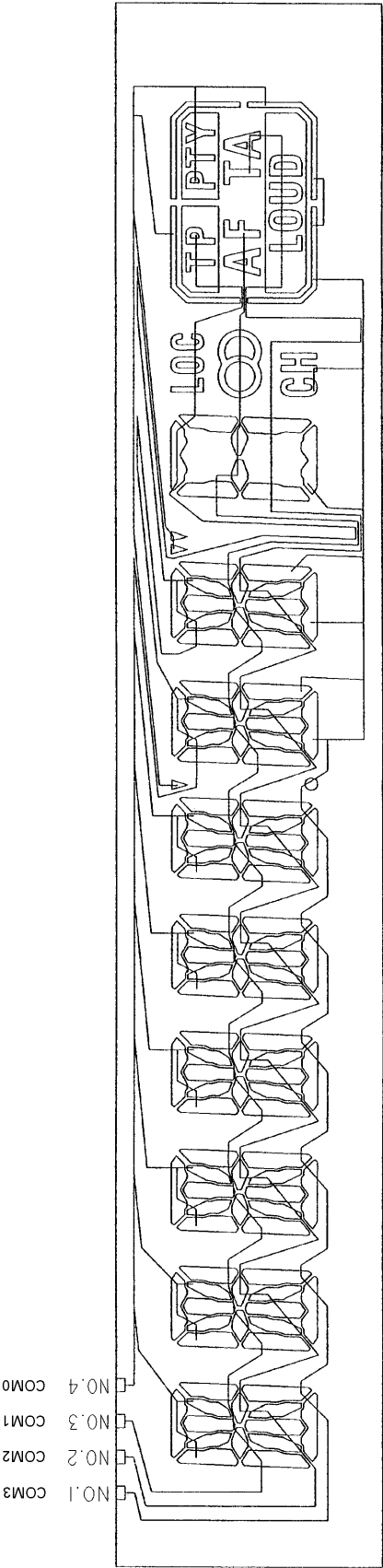
● CAW1559

7.2.2 DISPLAY

KEH-3930R,3900R

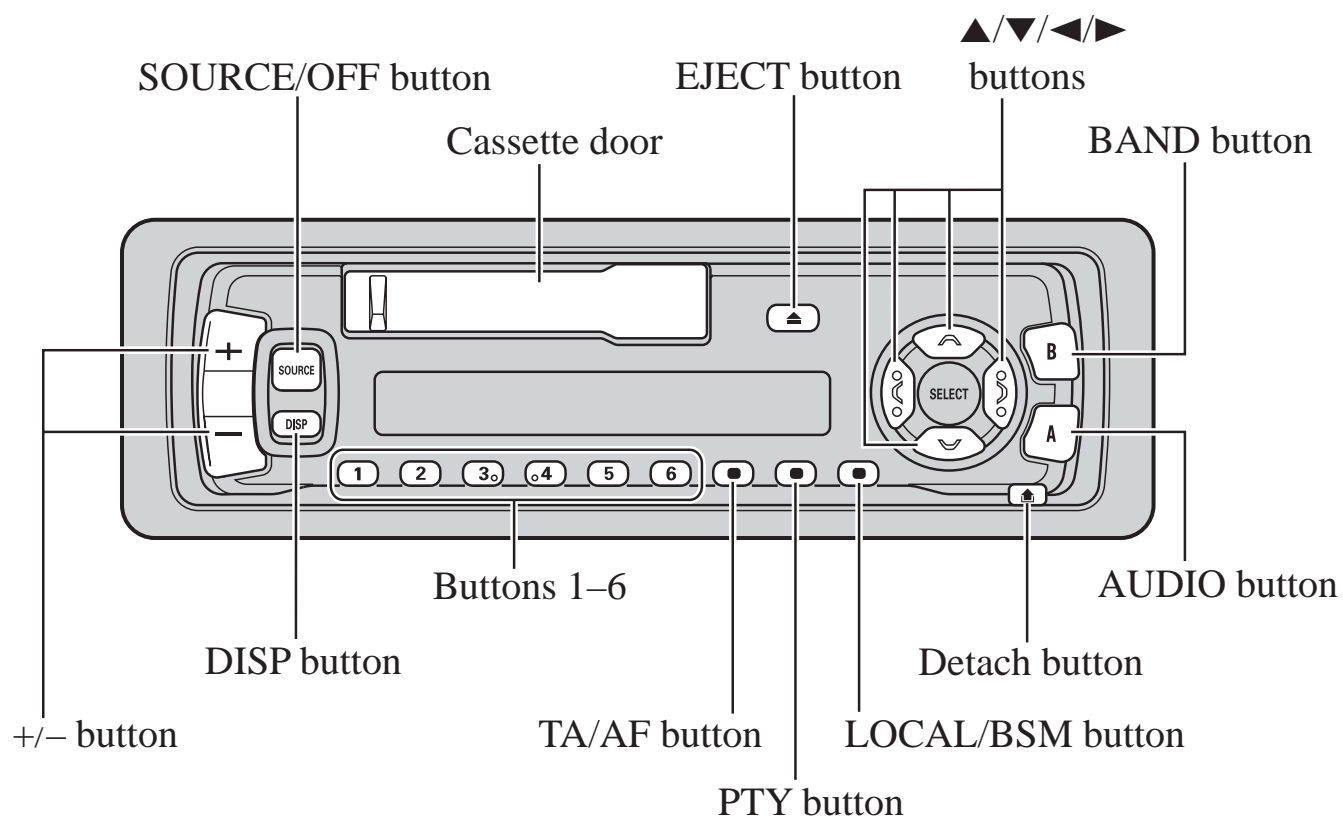


COMMON



8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS



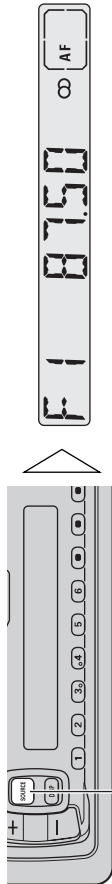
To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:

- Loading a cassette in this product.

1. Select the desired source (e.g. Tuner).



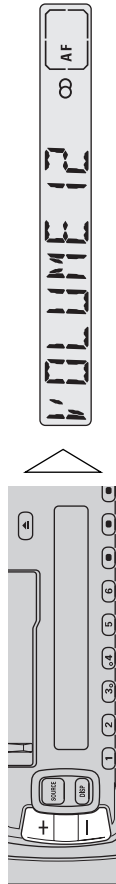
Each press changes the Source ...

Each press of the SOURCE/OFF button selects the desired source in the following order:
Tape → Tuner

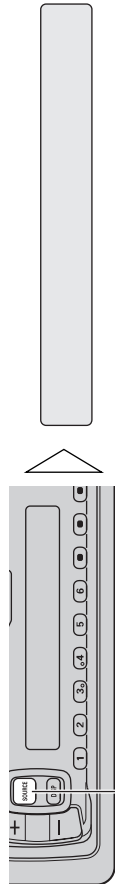
Note:

- The cassette player will not change when no tape is set in this product.
- When this product's blue/white lead is connected to the car's Auto-antenna relay control terminal, the car's Auto-antenna extends when this product's source is switched ON. To retract the antenna, switch the source OFF.

2. Raise or lower the volume.



3. Turn the source OFF.



Hold for 1 second

Basic Operation of Tuner

This product's AF function can be switched ON and OFF. AF should be switched OFF for normal tuning operations.

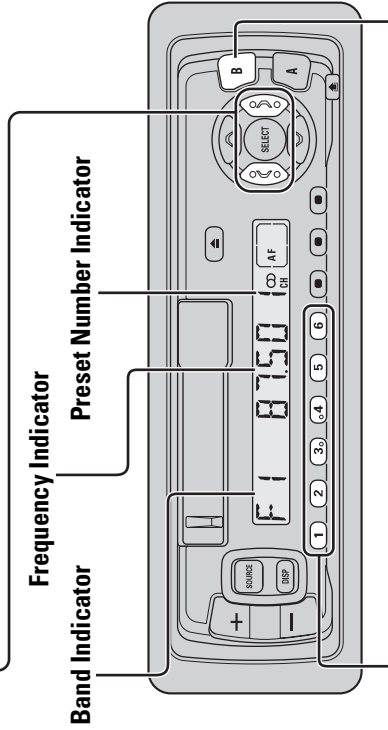
Manual and Seek Tuning

- You can select the tuning method by changing the length of time you press the ◀/▶ button.

| | |
|------------------------------|---------------------|
| Manual Tuning (step by step) | 0.5 seconds or less |
| Seek Tuning | 0.5 seconds or more |

Note:

- If you continue pressing the button for longer than 0.5 seconds, you can skip broadcast stations. Seek Tuning starts as soon as you release the button.
- Stereo indicator "Ⓢ" lights when a stereo station is selected.



Preset Tuning

- You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.

| | |
|---------------------------------|-------------------|
| Preset station recall | 2 seconds or less |
| Broadcast station preset memory | 2 seconds or more |

Band

F1 (FM1) → F2 (FM2)
→ MW/LW

Note:

- Up to 12 FM stations (6 in F1 (FM1) and F2 (FM2)) and 6 MW/LW stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

Basic Operation of Cassette Player

Fast Forward/Rewind and Music Search

- Each press of the **▶** button selects **Fast Forward** or **Forward-Music Search**.
FF (Fast Forward) → F-MS (Forward-Music Search) → Normal Playback
- Each press of the **◀** button selects **Rewind** or **Rewind-Music Search**.
REW (Rewind) → R-MS (Rewind-Music Search) → Normal Playback

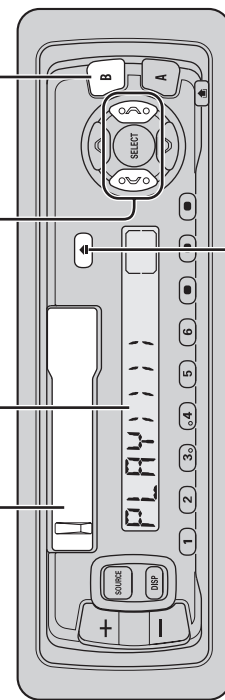
Note:

- Fast Forward/Rewind and Music Search can be canceled by pressing the **BAND** button.

Cassette Loading Slot

Direction Indicator

Direction Change



Eject

Note:

- The Tape function can be turned ON/OFF with the cassette tape remaining in this product.

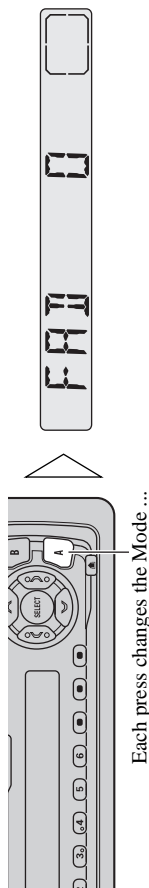
Entering the Audio Menu

With this Menu, you can adjust the sound quality.

Note:

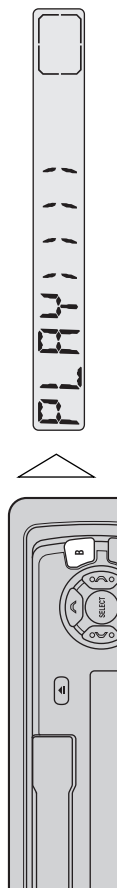
- After entering the Audio Menu, if you do not perform an operation within about 30 seconds, the Audio Menu is automatically canceled.

1. Select the desired mode in the Audio Menu.



2. Operate a mode.

3. Cancel the Audio Menu.



Audio Menu Functions

The Audio Menu features the following functions.

Balance Adjustment (FAD)

This function allows you to select a Fader/Balance setting that provides ideal listening conditions in all occupied seats.

1. Press the **AUDIO** button and select the **Fader/Balance mode (FAD)** in the Audio Menu.



2. Adjust front/rear speaker balance with the **▲/▼** buttons. "FAD F15" – "FAD R15" is displayed as it moves from front to rear.



3. Adjust left/right speaker balance with the **◀/▶** buttons. "BAL L9" – "BAL R9" is displayed as it moves from left to right.

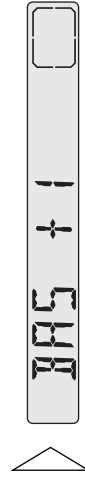
Note:

- "FAD 0" is the proper setting when 2 speakers are in use.

Bass Adjustment (BAS)

You can adjust a Bass level as desired.

1. Press the **AUDIO** button and select the **Bass mode (BAS)** in the Audio Menu.



2. Boost or attenuate the bass level with the **▲/▼** buttons. The display shows "+6" – "-6"

Treble Adjustment (TRE)

You can adjust a Treble level as desired.

1. Press the **AUDIO** button and select the **Treble mode (TRE)** in the Audio Menu.



2. Boost or attenuate the treble level with the **▲/▼** buttons. The display shows "+6" – "-6"

Loudness Adjustment (LOUD)

The Loudness function compensates for deficiencies in the low and high sound ranges at low volume.

1. Press the **AUDIO** button and select the **Loudness mode (LOUD)** in the Audio Menu.



2. Switch the Loudness function ON/OFF with the **▲/▼** buttons.

9. Yellow/black

If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.

1. This Product

2. Antenna jack

12. To system control terminal of the power amp or Auto-antenna relay control terminal.
(Max. 300 mA 12 V DC.)

10. Fuse

11. Blue/white

3. Red

4. To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

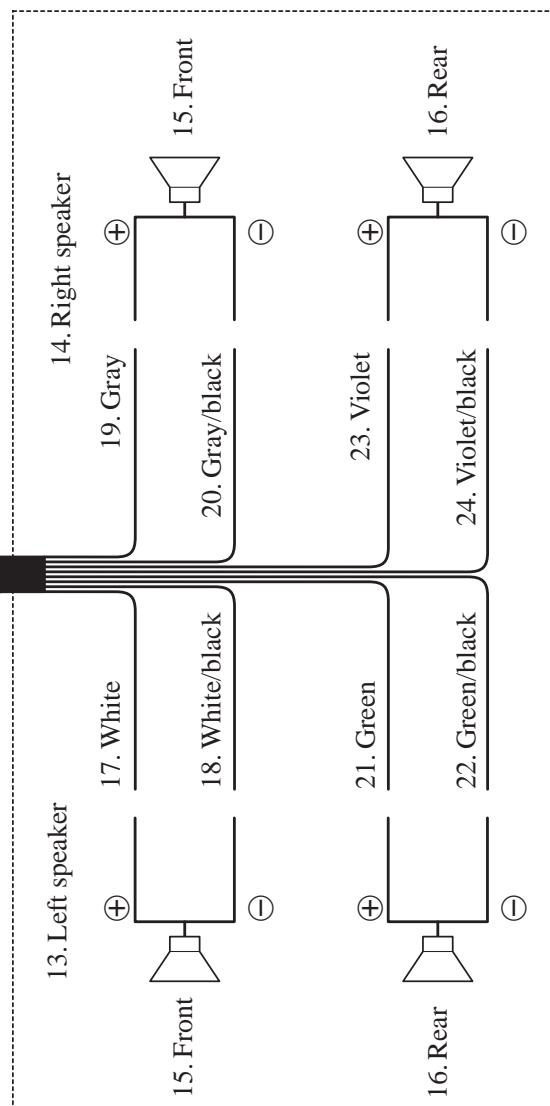
5. Yellow

6. To terminal always supplied with power regardless of ignition switch position.

7. Black (ground)

8. To vehicle (metal) body.

25. With a 2 speaker system, do not connect anything to the speaker leads that are not connected to speakers.



| | |
|--------------------------------|-------------------------------------|
| Power source | 14.4 V DC (10.8 – 15.1 V allowable) |
| Grounding system | Negative type |
| Max. current consumption | 8.5 A |
| Dimensions | |
| (mounting size) | 178 (W) × 50 (H) × 155 (D) mm |
| (front face) | 188 (W) × 58 (H) × 19 (D) mm |
| Weight | 1.2 kg |

| | |
|-------------------------------|---------------------------------|
| Maximum power output | 40 W × 4 |
| Continuous power output | 22 W × 4 |
| | (DIN45324, +B = 14.4 V) |
| Load impedance | 4 Ω (4 – 8 Ω allowable) |
| Tone controls | |
| (Bass) | ±12 dB (100 Hz) |
| (Treble) | ±12 dB (10 kHz) |
| Loudness contour | +10 dB (100 Hz), +7 dB (10 kHz) |
| | (volume: –30 dB) |

Tape Compact cassette tape (C-30 – C-90)
Tape speed 4.76 cm/sec.(+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewinding time Approx. 100 sec. for C-60
Wow & flutter 0.09% (WRMS)
Frequency response 30 – 16,000 Hz (± 3 dB)
Stereo separation 45 dB
Signal-to-noise ratio 61 dB (IEC-A network)

| | |
|----------------------------------|---|
| Frequency range | 87.5 – 108 MHz |
| Usable sensitivity | 11 dBf (1.0 μ V/75 Ω , mono, S/N: 30 dB) |
| 50 dB quieting sensitivity | 16 dBf (1.7 μ V/75 Ω , mono) |
| Signal-to-noise ratio | 70 dB (IEC-A network) |
| Distortion | 0.3% (at 65 dBf, 1 kHz, stereo) |
| Frequency response | 30 – 15,000 Hz (\pm 3 dB) |
| Stereo separation | 40 dB (at 65 dBf, 1 kHz) |

Frequency range 531 – 1,602 kHz
Usable sensitivity 18 μ V (S/N: 20 dB)
Selectivity 50 dB (\pm 9 kHz)

Frequency range 153 – 281 kHz
Usable sensitivity 30 μ V (S/N: 20 dB)
Selectivity 50 dB (\pm 9 kHz)

- Specifications and the design are subject to possible modification without notice due to improvements.